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CHARLES H. SHINN, *Editor.*



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No. 1.

THE



California Horticulturalist

AND

Floral Magazine.

"Men come to build stately sooner than to garden finely, as if gardening were the greater perfection."

—LORD BACON'S ESSAYS.

CHARLES H. SHINN, EDITOR.

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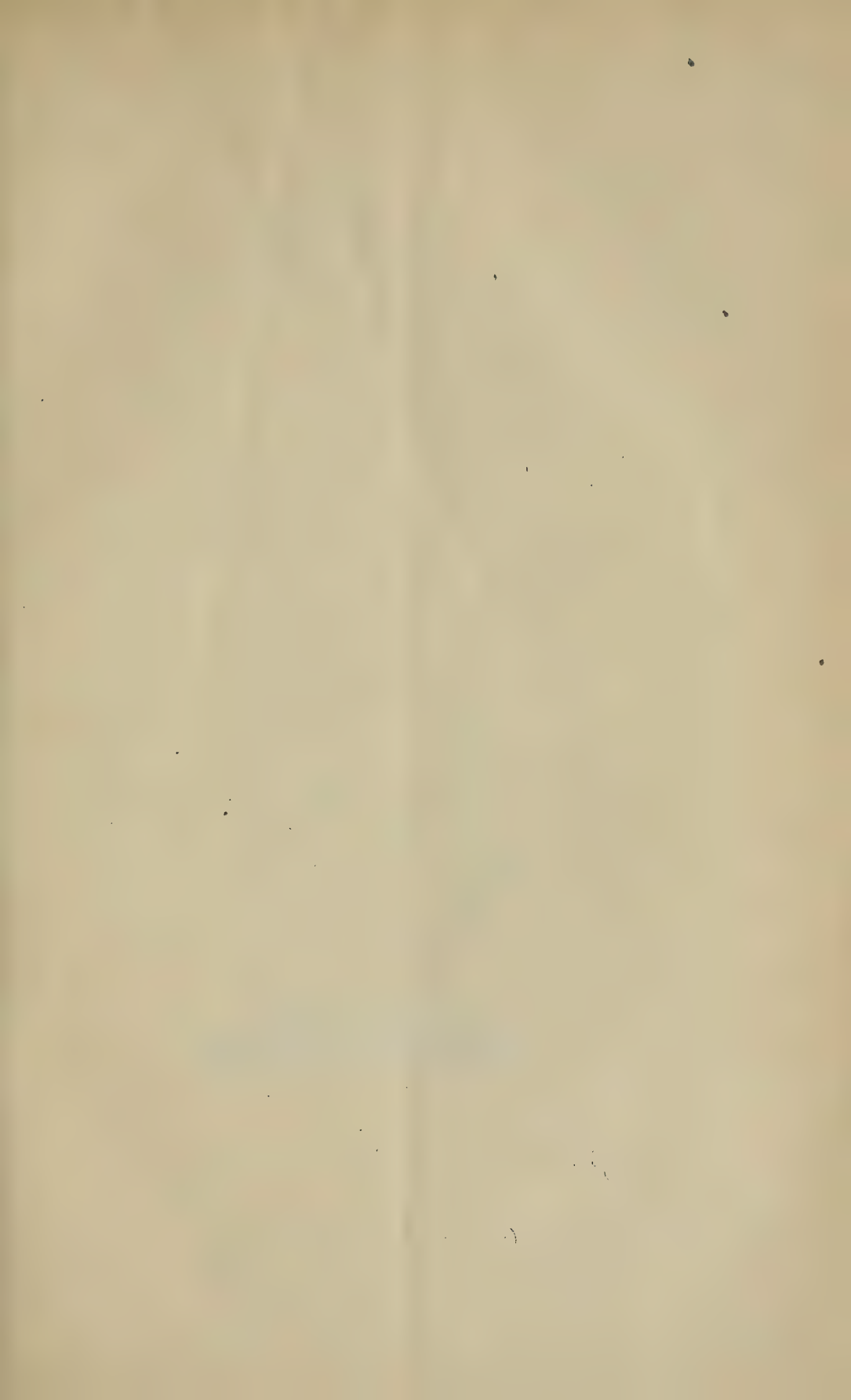
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No. 1.

Original Articles.

FLORICULTURE AND THE STUDY OF BOTANY.

By PROF. E. W. HILGARD, University of California.

Few of the many who cultivate flowers, realize how much greater would be their enjoyment of their nurselings, if they had even such rudimentary knowledge of the charming science of botany as may be acquired by any one by occasional readings in leisure hours. Nothing can be more absurd than the assertion sometimes made, that persons versed in science have, *on that account*, a less acute perception of the beautiful in the objects of their study. There are among scientists, as well as in all classes of persons, those to whom nature has denied the sense of the artistically beautiful; just as there are persons who are color-blind, or deaf to the difference between a negro song and a symphony of Beethoven, on the whole perhaps preferring the former. Yet even in the latter class, culture will often bring about a certain degree of good judgment, if not instinctive appreciation. But can any one imagine that a natural taste for music or painting could be spoiled by the scientific study of these arts? Yet that would be not a whit

more preposterous than the supposition that the study of natural science can spoil, instead of cultivating, an inborn sense of the beautiful in nature or in art.

What science really does for those possessing an appreciation of the beautiful, is to render its possessor conscious of the existence of many more beauties than those which appear to the uncultured eye. However impressive may be the sight of the starry heavens even to the savage, a star is to him no more than the glitter of so much tinsel; and it is difficult to conceive how the knowledge that what we see in the firmament is a whole universe of rolling orbs and blazing suns, could possibly detract from the impression in civilized man. It is no less unimaginable that a familiarity with the wonderful variety and beauty of the structure of flowers should detract from the admiration for the beauty of their outward form and color, felt by any one who feels on the subject at all; but it may nevertheless happen that the child whose first impulse is to get at the sawdust with which the new doll is stuffed, may grow up to delight in imagining what a beautiful skeleton his or her sweetheart would make. Such minds run in different channels from the bulk of mankind, yet, while in-

sensible to beauty of form, may be keenly alive to that of other kinds of harmony; such are, however, "born, not made," by the study of science.

"Beauty-blindness" is, I think, more rare with botanists than with those cultivating any other branch of natural science; perhaps because it is generally the bright color and graceful forms of flowers that first attract to the study, and also because in its further pursuit, it is difficult to find anything that is in any proper sense ugly, even in the prosecution of that anatomy which, when applied to the animal kingdom, so often proves too much for the nerves of persons not otherwise very delicate. No such feeling can, even for a moment, overcome the vegetable anatomist. On the contrary, he is sometimes apt to forget that when flowers or plants become very minute, others with eyes unaided and untrained can not see them as he does.

Let no one, then, fear lest by the study of their structure, he should lose his appreciation of the artistic beauty of flowers; but be assured that the enjoyment can thereby only be enhanced, in revealing a thousand beauties on every wayside, even where the uninitiated see none at all. It is the latter circumstance, among many other considerations, that renders botany a study so especially desirable for children; both as a positive means of culture for their inquiring minds, in a direction in which they naturally tend, and as a welcome and pleasant mode of keeping them out of a great deal of the mischief they get into merely from the want of something better to think of. But it is true that in order to make botany available for this purpose, its study must not be carried on in the unspeakably dry, wooden fashion which, not many years ago, made it the special abomin-

ation of every young ladies' institute where a dozen "ologies" were taught, or supposed to be taught, in the course of one or two years. For aught I know "Mrs. Green's Botany," and a few other treadmill productions of like style, may still be in course of infliction upon some of the unfortunate classes in remote districts. There was some excuse for this so long as the writing of elementary works was left to tyros and compilers; but since men like Asa Gray have put their hands to the work of writing for children, the path to a reasonably accurate understanding of botany, as well as of most other branches of natural science, has become as practicable, and at least as pleasant to the young of all ages, as that well-trodden one leading to the "three r's." There is now no reason why the rudiments of these sciences should not be taught in their proper place—the primary department of the common schools—except the adverse practice handed down to us from past ages, and the lack of teachers properly trained both in the matter and the spirit of this kind of instruction. For whenever natural science—the outgrowth of the study of objects—is attempted to be taught without the latter, from the book only, it becomes far more wearisome to the majority of learners than subjects like mathematics, which the pupil can in a measure "evolve from his internal consciousness."

Although the consideration of increased enjoyment is the chief one that should lead lovers of flowers to the study of botany, there are a few practical advantages that are worth considering. A knowledge of vegetable physiology, of the natural relationship of plants, of their habits in their native climates, and of those climates themselves, will enable the possessor to act more understandingly, and of course to

be more successful, in the culture of plants; and this holds true of professional gardeners and nurserymen no less than of amateurs. And since fashion has made its way even into churches, it is no wonder that it should from time to time, according to its caprices, pronounce certain flowers, or particular varieties, "the thing," for which those who pretend to keep up with the times must pay any extravagant price that gardeners may choose to ask for the time being. We need not go back in history as far as the "tulip mania" of the past century, when we have just now the mania which has for its object the magnificent "velvet plant;" which although undistinguishable from, and altogether identical with, the common mullein of pastures throughout the temperate zone, is now being assiduously bought and cultivated within plain view of its less fortunate sisters by the roadside, as the latest novelty and great acquisition for ornamental lawns. This is an example of the many annually recurring cases in which a little knowledge of botany would enable the floriculturist anxious to keep up with fashion to do so at a trifling cost, instead of paying fancy prices for the latest novelty, named for some distinguished personage and described as "very distinct" on account of some new blotch or line on the petals, that may disappear again in the course of a single season. The mullein is certainly quite as handsome as a great number of exotics now cultivated in conservatories with the greatest care, and exhibited to visitors with pride. It is scarcely necessary, however, to bring proof of the immense influence exerted upon the current estimate of what is beautiful, not only by the fashion of the time, but especially by the real or supposed rarity of the object, or what is often called its in-

trinsic merit, but is more often a purely fictitious factor. The very people who laugh at the physician's enjoyment of a "beautiful case" of cancer or gangrene, will exhibit on their parlor mantels "*objets de vertu*" of surpassing hideousness or insignificance, but which their knowledge or imagination invests with a beauty quite invisible to the general public.

How much more real is the beauty that the botanist, with his eyes sharpened by knowledge and magnifier, sees in what to many persons seem insignificant and uninteresting plants. Nor will he be likely to fall in, even for a moment, with that absurd snobbishness which leads even well-meaning persons to entertain, or at least express, a certain contempt for flowers designated as "common" or "old" because they have been esteemed for their beauty from time immemorial. Next to sincere religious feeling (properly so called) there is nothing that so effectually counteracts the tendency to succumb to the inanities of fashion, as the study of natural science. It at once transports the learner to a region where shoddy and shams can not possibly find a footing; but where beauty, harmony, and unity of intelligent purpose, amid endless variety of form and adaptation, meet him at every step.

A FEW OF OUR NATIVE WILLOWS.

By DR. C. L. ANDERSON, Santa Cruz, Cal.

Some years ago, Prof. Asa Gray, the veteran botanist of the United States, gathered up all the willows of his Herbarium at Harvard University and sent them to M. S. Bebb, of Illinois, who had a willow garden—a "*Salicetum*," as he scientifically termed it. Mr. Bebb was making a study of the *Salices*, and had plants from many parts of the

world. American botanists began to rejoice that at last a competent man would do a good service to botany, and make himself a well deserved reputation in a difficult field. I was applied to for Californian species. That was more than six years ago. I made a pretty careful study of the willows of Santa Cruz and will give the readers of the *HORTICULTURIST* the result of our work, so far as this locality is concerned.

I fear Mr. Bebb has become discouraged. The task of arranging American species in a satisfactory manner is as yet unaccomplished. The willows are the "black sheep" of the botanist, and to be successful they must be studied at all seasons of growth. Herbarium specimens will not do, unless selected as but few collectors ever select them. It is necessary to have the flowers, staminate and pistillate, in their different stages of growth. These are borne on different trees, giving the trees quite a different aspect during flowering and fruiting season. Then the leaves should show different stages of their growth, and the different ages of the plant make quite a change in the appearance of the leaf, so that leaves from young trees and old trees of the same species must be compared. Then after the botanist has all these, still he may be the more confused unless he has the growing plants before his eyes. So that Mr. Bebb's plan of a willow garden was a good one. I tried to encourage the starting of one at our University, and sent about fifty species for trial. Nearly all have perished between squirrels, drought, and want of proper care and place to rear them.

But the willow is a beautiful tree, and many species are quite ornamental. Their uses are numerous and valuable. They are easy of cultivation, and yet we know less about them than almost any

other tree. There is no garden in America (except Mr. Bebb's) where they can be studied and compared. Kew Herbarium, in England, is the only place where American types of the willow can be found.

I should be glad to see an interest excited in California in willows. We have some very handsome indigenous species. Growing in the vicinity of Santa Cruz we have five species, as follows:

1. *SALIX BIGELOWII*, Torr.—"Bigelow's Willow," most common species in California. Grows 10 to 50 feet high, generally along streams and river bottoms; leaves are spatulate, glossy green on top, pale glaucous underneath, sparingly toothed on edges, with the margin wavy. The young branches make good basket-ware. It flowers from January to June.

It does not correspond well with Bigelow's Willow, but for the present must bear that name.

2. *SALIX LASIANDRA*, Benth.—This, in thrifty trees, has long tapering leaves, nearly the same shade of green on both sides, evenly and sharply serrate. It is found in some localities with No. 1. In somewhat impoverished trees it has long slender branches, and drooping, somewhat like the weeping willow. It has several names—*S. lucida*, *S. pentanora*, and a number of varieties. Corresponds with the "Shining Willow" of the Atlantic States.

3. *SALIX LAEVIGATA*, Bebb.—This seems to be a new species, and a beautiful willow too. The leaves are smooth and shining, finely serrate with sharp point, not tapering, glaucous underneath, beautifully veined. The tree grows 10 to 50 feet high with a pyramidal aspect when young. Resembles a cherry tree somewhat. The flowers (catkins) are pale yellow, long and

slender; blooms in June, and flowers remain on the tree for two or three months. Found with Nos. 1 and 2.

4. *SALIX SITCHENSIS*, *Bongard*.—This is the Sitka willow, found sparingly at Santa Cruz, perhaps its southern limit. Beautifully lined with white velvet on the under side of the leaves—the upper side is dark green, evenly veined, with scarcely a trace of velvet except on the midrib. The tree, 5 to 15 feet high, has a reclining aspect, and grows in wet places near the edge of and bending over streams. Over the bay at Monterey is found *Salix Coulteri* which resembles the Sitka willow in the velvet appearance of its leaves, but it is a different species, and very pretty.

5. *SALIX BRACHYSTACHYS*, *Benth.*—A very interesting little tree on our brushy hill and mountain sides, seldom coming down to the bottom lands. In February the male flowers light up the hill-sides, with their short woolly catkins, in a glow of white splendor. But the female flowers, larger and coarse, do not appear until late in May. The leaves are in shape like *S. Bigelowii*, but are lined underneath with a thin coat of fine hairs which turn rusty brown as they become old.

When the second volume of our California botany is published we hope, through the perseverance of Mr. Bebb and others, to see the willows of our State brought into a more satisfactory system, so that our local botanists and horticulturists may understand each other better when talking of this useful and beautiful genus of plants.

WILD GARDENS.

By JEANNE C. CARR, Sacramento, Cal.

No effect of the landscape gardener's skill, even where, as with us, the resources of many lands and climates may

be made tributary to it, can equal the beauty of Nature's Wild Gardens.

I have come upon them unawares, in wild walks among the Green Mountains of Vermont, in deep fringes of timber which skirt the lakes and lakelets of the great northwest, among the alpine meadows of the Sierra Nevadas, and always with the feeling that finer than mortal spirits must tend them and keep them; always to find myself wishing, as Ruskin said of the mosses, that there were words "delicate enough, pure enough," to convey a sense of their beauty to those who can not experience their sweet surprises.

I well remember a June afternoon in a Berkshire forest. A mountain wood lot had been devoted to the axe, and I was permitted to go with my grandfather and the wood-cutters, who were laying out a road, and marking the tall trees along its borders. There were great oaks, beeches, hickories, wild cherry and sweet birch trees, tulip and sassafras, hemlock and pine timber on the northern slopes; higher up were black and white spruces, and the very summits were adorned with the "Fraser Pine," (*Abies Fraseri*) whose perfumed cones made a part of our summer furnishing.

I shall always remember that as a spiritual birthday, for I found Calypso and and her relative, the moccasin flower, and was initiated into the secret of which Emerson speaks in "Forbearance:"

"Hast thou named all the birds without a gun,
Loved the wild rose and left it on its stalk,
And loved so well a high behavior
In man or maid, that thou from speech refrained,
Nobility more nobly to repay?
O, be my friend, and teach me to be thine?"

How fresh were the scented pastures through which we passed, where sweet fern and laurel made a tangled undergrowth; how solemn the deep woods seemed when I was left to wander at

will, bidden only to keep within sound of the axes.

The moccasin is never a social plant. In the woods when they are most abundant, each seems to retire into privacy, and my first moccasin, standing in a shaded seclusion, was more distinctly individualized than any human person I ever met. As I never should think of pulling the hair of a lovely lady seen for the first time, I was unperverted enough not to lay violent hands upon these refined wood creatures; so, reverencing my moccasin, I drew near and, without touching it, noted the rich green leaves lying prone upon the carpet of pine needles, as if listening to the pulses of the great mother's heart; observed the fine erectness of the scape, the veined nectary with its transparent "ears to hear." Suddenly a subtle odor, more exquisite than the breath of our Californian dog-rose, mingled with the breath of wintergreen and pine. I pushed through the matted hemlocks, and stood in a silent company of incense bearers, surprised in the performance of their beautiful rites. All over the forest floor was spread a thick carpet of *Linnaea borealis* in perfect prime. Myriads of tiny roseate bells were shedding their faint perfume, and in the midst stood a great bush of wild azalea, one mass of rose purple, tender and transparent as a summer cloud, yet substantial as beauty and truth and love are in a world of shadows. And over all this blended harmony of fragrance and color, hung a canopy of the white dogwood. Imagine this picture framed in the green feathery circle of hemlock trees, and you will see with the mind's eye such a wild garden as may still be found in Maine, in the Adirondacks, and among the Alleghanies.

I can not stop to tell how heaven repeats itself upon the prairie floor in

blue of violets (*viola pedata*), or in our Sierras, when fields of tiny gentians cover the thin new soil, for all this remembrance is temporarily burned up in a desire to explore *the wild gardens of New Guinea*. I have lately been reading Captain Lawson's book for the third time, and a new world of beauty, new conquests for science, for horticulture, for landscape art, seem rising to my view. Describing the Papuan Ghauts, he says: "Although trees were scarce here, herbage and plants were plentiful, even to luxuriance, bushes and shrubs formed impenetrable thickets, and the multitude and beauty of their flowers I can not attempt to describe. Lilies of three different kinds, red, white and yellow, were very abundant at a height of from fifteen hundred to two thousand feet. Daisies, similar to those which grow in our English meadows, *but as large as sunflowers*, were very common. They were crimson tipped, but not very modest, seeing they lifted their heads to a height of eighteen inches."

One could well afford to spare the "Daisies," so unmindful of their classical proportions, but now comes a description which fascinates in every line: "But by far the most beautiful flower I saw here was one borne by a bulbous plant. It was the shape of a narcissus, nine inches in diameter, and of a lily-white color, spotted with deep crimson. It gave forth a delightful odor, which was so powerful that one's hands would retain the perfume of it for hours after the plant had been handled. The leaves were six or seven feet in length and one in breadth, and so tough that I found it impossible to break one of them in two. There were from thirty to fifty flowers on each plant, but seldom more than one flower at a time, though there might be several buds in

various stages of growth. The bulb was as large as a man's head, the height of the plant was nine to ten feet, the flower standing several feet above the leaves. Clustering round the foot of the flower stalk, among the leaves, was a large quantity of soft white down, which I have proved by an actual comparison to be of the same kind as that used by the bird of paradise to line its nest; so that if this bird does not actually alight upon the ground it comes within a few feet of it."

We have seen Japan lilies, "spotted with deep crimson," and can believe in this unseen beauty; we have also seen the southern mountains when the Spanish bayonet, also a liliaceous plant, sent up its glorious shafts of bloom; we know the tough fibre of New Zealand flax, another of the family; we have "considered the lilies" for more than forty years, and now comes this new wonderful discovery of the lily of lilies, the latest found, apparently possessing all the uses and all the beauties of this high-born family. When we have a lily garden, from this as a centre, lines of lilies shall radiate—tiger lilies—the lily without which no garden is worthy of name, viz: that which the angel bore in the Annunciation; the Washington lily; Bloomer's *lilium pardalium*; lilies of Palestine; the sweet white *lilium longifolium*; fragrant lilies of Japan; the "meadow lily" of the Eastern States; and, tipping the outermost rays, there shall be golden points of our *calochortus*, and pure blue of *leubertia*, with delicate shading of *cyclobothea cerulea*. All these fair and fragrant treasures of old and new lands, take kindly to California sun and soil.

Not only in describing the undergrowth of papua does Captain Lawson stimulate our imagination, but in his description of the trees he gives us new

worlds to conquer. He says of the "wallah" tree: "I should say it is the tallest tree in the world. One specimen that I measured was three hundred and thirty-seven feet in height, another three hundred and twelve, a third two hundred and ninety-eight. The diameters of these trees were twenty-two feet, twenty-five feet nine inches, and nineteen feet eleven inches, respectively. To describe the impression produced upon me by these enormous trees is impossible. I was astounded at their magnitude, made still more impressive by their elm-like growth. They were literally alive with parrots and other birds, which were effectually protected by their height from any weapons used by the natives."

The wallahs produce edible nuts, which the natives roast as we do chestnuts, nuts ripening in September and January; but the glory of the trees is their clusters of scarlet or orange-yellow flowers. "The ground under the trees is often seen covered with these, which the parrots bite off in the same manner that they do the nuts."

In that most charming of Canon Kingsley's books, "Christmas in the West Indies," we have not a glimpse, but a rare word-painting of the Wild Gardens of Jamaica. Miss Bird is almost as happy in her descriptions of the "ferneries of the Sandwich and Society Islands."

Out of all the unclaimed riches of wild nature we have apparently gathered only a few fragments. We know only a tithe of the varied uses and adaptations of the vegetable world to the comfort and happiness of man. A few of the earlier pioneers of California have devoted a part of their wealth to the encouragement of experiments in new cultures, and have not forgotten the wild plants. At General Bidwell's

and Col. Hollister's one may find hints of wild gardens in canopies of wild grape, and thickets of ceanothus trees, but for the most part our planting is as far from nature, as meaningless, as empty of suggestion, as a vitiated taste can make it.

The storm tossed cypresses of Monterey mingle their music with the solemn diapason of the sea, but those green pyramids along our streets named by their name are voiceless, shorn of all beauty, without freedom even to shake the dust of the streets from their maimed branches. The study of wild gardens is recommended as a means of correcting and removing those melancholy proofs of depraved taste, as well as for their higher uses in typifying the imperishable beauty of the life which eye hath not seen.

STRAWBERRIES IN THE FOOTHILLS OF PLACER COUNTY.

By E. B. SILVA, Newcastle, Cal.

Although the strawberry is not nearly so extensively cultivated as in Santa Clara, Sacramento, and other valley counties, the berry-growing interest here is not a small one, and the area under cultivation is being rapidly increased. The unevenness of the ground, with its many hills and gulches, offer obstacles to the cultivation of this fruit, in making irrigation difficult, and without frequent and thorough irrigation the strawberry will not thrive. When level land can be obtained, it is preferable for strawberry growing, but level land in the foothills is not plentiful in tracts of any size; so we plant on the hillsides, and irrigate by ditches, dug above each row.

The hill system of cultivation is invariably practiced here, and I believe is generally practiced throughout the

State. Care should be exercised in the selection of plants; they should be strong and stocky, and, if planted early and well taken care of, some varieties will produce quite a crop the first season.

Manure should be used liberally, and the beds kept free from weeds and runners. In the selection of varieties for market, the first consideration with the grower is productiveness; next, size; third, carrying qualities; fourth, color; and, lastly, flavor. The consumer wants a large, sound, well-colored berry when he goes to market, and if he gets all this and finds, when the fruit is brought on the table, that these requirements have been filled at the expense of a loss of the delicious flavor found in many of the unassuming varieties, he has only himself to blame. The eye should not be entirely depended upon in purchasing fruits. In nearly all cases, great size is obtained at the expense of flavor.

In the "Monarch of the West," great size is obtained, color is sacrificed, and flavor retained. The "President Wilder" is nearly perfect, as far as the berry alone is concerned. It is large, firm, richly colored, and of the very best flavor; in favored localities it is productive and profitable.

There is no fruit in which locality makes such a great difference as in the strawberry. Some varieties do well in almost any kind of soil, and under any mode of cultivation; others will only succeed in certain kinds of soil, and with the best of culture.

New varieties are constantly having their claims for superiority advanced; and, though but few of these varieties "come to stay," the desirable ones are taking the place of the familiar kinds. When we look back a few years, and think of long rows of "Longworth's Prolific," burdened with their large,

scarlet berries, it seems as if we had lost an old friend, and one whose place, as a market berry for this section, has not been quite filled since. Although the first crop of the "Longworth" lacked flavor, still it was of good size, and its bright color and good shipping qualities made it as desirable for market as its productiveness made it profitable to the grower. This has been for many years the standard variety in this State, but has so degenerated that it is being rapidly superseded by newer varieties.

"Agriculturist" did very well for a short time, but is seldom seen now. There is no handsomer berry than the "Jucunda;" the fruit is enormous, bright-colored and firm; as a market berry it has no rival. Our soil is too light for this variety; it requires rich, heavy soil, and needs frequent renewing. "Triomphe de Gand" is a fine market berry, being large, productive, and a good shipper; but it also needs heavier soil than we have here.

"Wilson's Albany" is a very heavy bearer, of medium sized berries, and is perhaps more generally cultivated throughout the Eastern States than any other variety. The "Monarch of the West" is now our leading berry, and it is held in high favor by all who have tried it; fruit of the largest size, averaging larger than any other variety in our collection. In color it is a little too pale; but the flavor is as good as is required. The vine is a strong grower, and productive. Vines set out nearly five years ago are now as vigorous as they were the second spring after planting. "Seth Boyden" is a valuable variety, very large, firm and well colored. "Charles Downing" is one of the best for home use; it is large, of good flavor, and productive, but is too soft for market.

"Star of the West" does not appear

to meet with much favor in the East; but if it does as well with us another season as it did last, we shall not hesitate to recommend it. It ripened very early, and the berries were plentiful, and averaged large throughout. Among the newer varieties, not yet tested in this State, is the "Crescent Seedling." It comes to us with many testimonials from reliable nurserymen. It is claimed that it has produced, under ordinary cultivation, at the rate of fifteen thousand quarts per acre. "Miner's Great Prolific" is a variety of great promise, combining many qualities in one variety.

"Great American" will doubtless prove a source of great disappointment to many growers, although, with extraordinary culture, it is of immense size (Mr. E. P. Roe states that he saw a "Great American" berry fourteen inches in circumference!); when such culture is wanting, it is apt to fail.

"Duchesse," "Prouty's Seedling," "Duncan," "Cumberland Triumph," "Cinderella," "Continental," "President Lincoln," "Sharpless," and a host of others have had their virtues highly extolled; it will take some time to thoroughly prove them. California nurserymen and fruit growers are progressive, and when a fruit proves worthy, its light will not remain long hidden under a bushel. A few dollars expended in the purchase and trial of new varieties of fruits will often amply repay the experimenter.

LILY CULTURE.

By W. C. L. DREW, El Dorado, Cal.

The beautiful family of lilies has never become popular in California, owing principally to the non-success of the few who have attempted their cultivation. During the last two or three

summers no bed in our gardens has given as much entire satisfaction as our lily bed, containing some one hundred bulbs. Much of this non-success in the cultivation of lilies arises from "working in" too much fresh manure, which has come in contact with the bulbs, and caused them to decay. Manure of any description causes more or less decay in lily bulbs when they come in contact with it. If the following directions are heeded, it will save much vexation and loss in your lily beds.

Select for the bed as high a situation as convenient; it must be situated so water will not lie on it or no success can be looked for. Having selected and made the bed, dig it thoroughly. The soil should be a moderately rich loam. Use no manures or fertilizers whatever. After having well pulverized the soil, smooth the surface and plant your bulbs, planting none, however small, less than six inches deep, setting large bulbs proportionately deeper. You can plant them at any distance apart, but they should never be set closer than one foot each way.

Having planted the bulbs and smoothed the bed, *leave them alone*, only removing weeds when necessary. Give the bed three good soakings during the summer, about the first of June, July and August; no further watering will be required, in fact, would be absolutely injurious.

Having once planted the bulbs, do not touch them for four or five years. In this way, and this way only, can you look for success in lily culture. The bulbs should be planted in November or December. Many of the bulbs will make very little growth the following season after removal, but the second season you will be regaled with their beautiful blossoms. Every year they

will grow handsomer. After being in the ground four or five years, they will make a most wonderful growth.

Such is the treatment given our lily bed, and with good success, after having failed in the usual and popular way of planting in highly manured and frequently watered beds.

WINTER BLOOMING ROSES IN CALIFORNIA.

By W. A. PRYAL, Oakland, Cal.

No garden in California below the 39° should be without its Winter Blooming Roses. Even north of this latitude, with judicious management, they may be made to exhale sweet incense on the "chilly eve." Nothing can give the amateur or professional florist greater pleasure than to behold a bed, or even a single plant, of these winter roses in all their glory during the days that are "dark and cold and dreary."

No work on floriculture that we are acquainted with gives directions for the treatment of winter blooming roses in the open border, which are applicable to our climate. To have roses in bloom in Great Britain and the Eastern States during the winter months, considerable labor attends their culture, and then they have to be grown in pots and under cover. It is different in California, and the many varieties that bloom and flourish are nearly all worthy of a trial. As we have said, many varieties can be grown with success. It may be asked, "What are the best?" This we will not undertake to fully answer; but giving the names of the very best we are acquainted with from experience will be of more use to those who contemplate the planting of this class of roses, than if pages of discussion and treatment were written on the sub-

ject by persons who have not grown them in this State. In this we will give not only the treatment, but also a short description of the roses mentioned.

The White Daily gives more flowers during the winter than any other rose, and is a favorite with all amateurs. Isabella Sprunt is an exceedingly vigorous grower and profuse bloomer; the rose is of a clear, delicate canary color, exquisite in bud, and for this it is considered one of the best. Hermosa is deserving of a place in a collection, being a free grower and good bloomer; color, pale rose. For a hardy rose and one that is highly prized for its buds, Bon Silene should not be left out under any circumstances. Of late it is attracting attention as a tea rose, having the delicious odor of that class. The color is peculiarly bright, but of a shade difficult to describe; a blending of purple and carmine with the slightest shade of orange. Agrippina, of a bright crimson, is the best of the red roses. Pauline is also a good red one. It would be hard to dispense with the bright buff bud of Safrano, a very handsome and showy grower, and a fine bloomer. Madame J. Ross Browne will prove a valuable rose on account of the beautiful white buds and good foliage. It is a tea, and was raised by a nurseryman of this county who has also originated several valuable trees and plants. The white tea rose, Bella, is doubtless one of the best tea-scented roses in cultivation, and is exceedingly valuable for white rose buds during the winter months. Madame Le Fay is a good one, as is also La Marque, which is a beautiful, pale, yellowish white rose, very large and full, of a delightful fragrance, of a climbing habit, and blooming in clusters. Some plants of this variety have reached giant por-

tions, as for instance the one at Santa Rosa, and another at San Jose. Solfatare is a Noisette rose, of a clear sulphur yellow, fine bud, full and sweet, and a free bloomer; adapted for pillars. La Pactole is an extra rose of a canary color.

With the above twelve varieties, a constant supply of roses can be cut every day during the winter. When healthy plants of good kinds are procured, the treatment will be simple. When the buds of the last crop of roses make their appearance in the summer, pinch them off and trim all weak branches, allowing only sufficient to give the plants a good form. Six to twelve inches is long enough for side branches of hybrid perpetuals, grown as standards or half standards. As a rule, the weaker the shoot is the more it should be pruned; but for the Tea, Noisettes, and Bourbons, there is little danger of trimming too severely, for it is the young shoots that produce the flowers, and the more vigorous these are, the more abundant will be the bloom. If the plants are pruned after each crop of flowers, no trouble will be experienced in keeping up a constant supply for winter or summer.

For a bed of winter roses, choose a spot that will be somewhat dry during the summer, and that can be watered artificially late in the autumn, should no rain fall by that time. Old and fine manure worked in the soil, provided that it is not too rank, will produce astonishing results in the way of an abundance of buds. In a heavy and compact soil, roses do better than in one that is light, containing much sand and vegetable mold. When once started into growth they need plenty of water.

Of late years, the mildew has been very injurious to growth of winter blooming roses in some localities. Few

buds have expanded on account of it. Some varieties, as Isabella Sprunt, Bon Silene, La Pactole, and La Marque, are free from it.

By having the soil in good condition and so well fertilized that a rapid and thrifty growth will be made, little fear may be expected from this disease.

THE PHYLLOXERA.

By W. A. SANDERS, Fresno City, Cal.

The name phylloxera comes from two Greek words, and means "parched leaf," from the insect causing them to have a withered appearance. These insects are intermediate between plant lice (*aphides*) and bark lice (*coccis*), being somewhat more nearly related to the former. There are nearly twenty species of them, inhabiting the leaves of different plants and trees, most notably those of the oak and hickory; but none of them possess interest from affecting any human industry except the *phylloxera vestatrix*, which is but little known, though widely talked about, from its ravages on grape vines.

The first appearance is usually in the form of galls on the under side of the leaves. On opening one of these galls we find the insect one-twentieth of an inch long and about half as broad, of a dull orange color, and looking like a small, oblong, flattened seed of German millet. She is depositing eggs inside of the gall, apparently about one-eighth of the size of her body. These eggs hatch when about a week old, and the active young lice quickly find their way to the more tender leaves of the plant, where they form galls and increase in the same manner. Several generations are thus produced in a summer—a countless number from a single mother. They do comparatively little damage while inhabiting the leaves, but when

autumn comes—when there are no more tender leaves on which to carry on their work—they follow the stem down into the ground, and hybernate upon the roots. They do this in a larva state. When the vine again starts into growth in the spring, this larva casts off its skin, becomes active, and soon begins to lay eggs. These eggs, strangely enough, produce part winged insects. These rise into the air, and fly away to other vineyards to carry the devastation to new localities. Doubtless other layings of eggs besides those of the hybernating insects, produce the winged kind, but I have never seen them except in spring.

I have found phylloxera in many vineyards where their presence was not suspected. They do but little damage till the third year. By that time they have caused a general decay of the roots of the vines first attacked, and have left them for more healthy vines, so that the only way where their presence is suspected is to examine both diseased and healthy vines, unless the leaf galls at once determine their presence.

Remedies.—The sure remedy is water. You must be able to flood your vineyard and keep it under water at will during any part of the winter. Auxiliary to this is a loose, fine, sedimentary, but not too sandy soil. In the vineyards near Dijon, Eastern France, in 1872, I saw them bringing fine, sedimentary earth from great distances, and putting it a foot or more in depth around the vines, from which they had removed the heavy clayey soil of the vineyard.

A better remedy, however, is to plant the roots of "phylloxera-proof" vines on which to graft. With this view I am now experimenting with the Ives, Hartford, and some others. A vine, to be proof against its ravages, must have

abundant, thick spreading roots of firm texture. The bark must be thick and firm, and the vine must be of active growth, pushing new spongioles rapidly in all directions. Any vine combining these qualities will make a good stock on which to graft.

There is one problem in this connection, however, that I have not solved. That is: How will grafting on roots so different from their own affect the fruit of our finest grapes? Whether my delicate, luscious, seedless white Corinths, for instance, will still be seedless and retain their delicious flavor, and many other good qualities, or whether they will deteriorate, are questions which only time, observation and experience can answer.

These are some of the thoughts that five years of observation on the phylloxera have developed. Five years ago I discovered them among my vines. Since that time I have neither sold, given away, nor allowed a cutting or vine to be carried off from my premises. But I have now most positively established the fact that cuttings can be sent out without any danger of transmitting phylloxera. But beware of rooted vines; as it is through the shipping of them that the pest has been so widely disseminated.

POSSIBLY A NEW SPECIES OF DARLINGTONIA CALIFORNICA.

By E. J. HOOPER, San Francisco, Cal.

Our colored plate represents a remarkable specimen of *Darlingtonia* (or pitcher plant) which was found on Black Hawk Creek, in Sierra County. It presents a marked variation from plants of that family heretofore described.

Mr. Lemmon says: "Upon comparison of the flower-scapes, found plentifully at the place of growth, they were

seen to differ essentially from any illustrations of the plant ever noticed by the writer. The *Scientific Press*, some time ago, represented the flower as about 12 inches high at maturity; in the patch of *Darlingtonias* from which our specimen was taken the flowers reach an average height of 40 inches. Newberry's Report on the *Darlingtonia*, which I examined in Prof. Bolander's library, represents the bracts upon the scape as increasing in number and size near the blossom, and finally blending with the floral envelope. With this the illustration given in the American *Agriculturist* agrees. Now, our party on Black Hawk Creek examined hundreds of scapes, finding each without a vestige of a bract nearer than $2\frac{1}{2}$ inches from the flower.

The stigma of *Darlingtonia* is described as a circular coronet, sessile upon the pericarp. In our specimen it is distinctly pentangular, and a little elevated upon a style. Other differences, not structural, were observed which would imply a new variety, although more study will be required to decide that point.

The *Darlingtonia* is a singular and beautiful plant, the only species known to science growing on this coast. Botanists find constant study in the inflated petiole, vaulted and armed inside with stiff hairs pointing downward, and in the saccharine substance secreted from the hood of the petiole to allure unwary flies. Gardeners, also, find it a great trouble; from lack of the needed cold it has failed at Woodward's Gardens, while at Oakland and the University failures are also reported. F. A. Miller sent plants to Washington and South Amboy, receiving word later that they were flourishing. If it has been grown elsewhere it can surely be grown here. I have transplanted some roots to

a similar locality to their native one, and propose, if they prove healthy, to introduce them elsewhere.

About twenty species of the *Nepenthes*, or Pitcher plants, are known, most of them natives of the Indian Archipelago. The strange foliaceous organs in this genus, with the remarkable terminal pitcher-like appendages, have given rise to discussions among botanists as to what part is petiole, and what is blade. It was stated that the hood part was the petiole, and the so called "lid" the true lamina. Hooker's recent investigations have, however, confirmed the views of Griffith, that the basal part is the lamina, tapering downward into the stalk, and that the pitcher-like appendage is a modification of the prolonged midrib of the leaf.

The size and shape of the pitcher differs in different species. Dr. Hooker describes one species from Borneo, in which the blade is 18 inches long, and 7 inches wide, the tendril extending 20 inches, and the terminal pitcher 12 inches long by 6 inches wide, with two fringed wings in front.

OUR NEMOPHILAS.

By J. B. HICKMAN, San Juan, San Benito Co., Cal.

We emphasize the *our*, for of all the smiling features of springtime none are brighter or more characteristic than our *Nemophilas*, and of the half score varieties under cultivation, I believe all, with perhaps one exception, are natives of California.

I presume somewhere, in the time to come, when our State shall be filled with homes, the name *Nemophila* will be as much a household word as the primrose, pansy, daffodil and forget-me-not. We, as well as other people, are too prone to seek novelties in our gardening, forgetting alike the beauties

of our land and what should be ties to bind us to it; we need that love of our land and its flowers that we see exhibited by the Scotchman with his thistle, the Irishman with his shamrock and daisy, or the Englishman with his primrose.

Nemophila (love grove) is almost a misnomer, for some of its species, as with two exceptions, they seem to prefer the open, sunny glade to the shade of the grove, although they will adapt themselves to nearly every variety of situation. Presenting, as the varieties do, so many combinations of white, blue, purple, and almost black, I can imagine no more beautiful conception of the poetry of light and motion than can be gained by watching the sparkling changes of a mass of blue and white *nemophilas* on a sunny slope as a brisk breeze sways them in its moods. Gardeners have long cultivated the brighter varieties, but there is one species, *Nemophila aurita*, that is a perfect gem for that poorly-filled, shady corner existing in so many gardens, particularly in cities. Its growth is rapid, its foliage soon covering a large space, to be in turn hidden by its myriad purple flowers. In a cool, moist situation, it blooms nearly all the year, and as it climbs on any shrubby support, by means of the hooks on its stems, it can be made of good use to hide unsightly objects.

A PEONY root now 70 years old is reported to be growing at South Manchester, Connecticut, which this season promised a full crop of blossoms. Now-a-days this old and favorite flower, the compeer of the lilac and other rural blooms, has given place to the more modern system of adornment. Nevertheless it should find a place in every garden. There are many lovely varieties of this old time favorite.

Correspondence.

[The editor of the CALIFORNIA HORTICULTURIST cordially invites all persons interested in any branch of horticulture to send practical questions and notes of their own successes and failures. A brief, undorned statement of events in one little garden may often prove of universal interest. Short notes from busy people, all over the Coast, will make this Department fresh and valuable.]

UNGUIDED TREE PLANTING.

EDITOR HORTICULTURIST—Sir: A few words on the subject of trees for shade and ornament, and the proper kinds to select, seem to be greatly needed. Californians have run wild over a few varieties useful in their places, but much overrated. Every man worthy of the name will uphold the teachings of his boyhood and the dictates of experience. I may, therefore, be pardoned in attempting to define the limits of these popular varieties.

The *Eucalyptus globulus* may first be mentioned. It hangs like a vulture over our lawns and gardens. It deals out death impartially to all the little plants within its reach. It saps the soil and shades homes which, in our beautiful climate, should be sunny. In its proper places, on our treeless mountain slopes or in the miasmatic swamps, the eucalyptus may be respected and esteemed. But is it possible to find in our cities or towns, suburban residences or country homes, a large or small garden not fairly smothered with eucalypti? They have been planted by the proprietor as things of beauty, which they certainly are not. We choose a picture to hang on the walls of our homes for its fineness of execution and the congruity of its parts. Why should we not, in like manner, choose trees for our gardens and pleasure-grounds? Why should we plant eucalyptus rows in lots of ground thirty by one hundred feet? It will almost

inevitably happen that after a year or two we shall have to run to our nurseryman, and tell him that this, that, and the other choice plant purchased of him some time previous fails to do well, and that many are dead!

Last spring, a friend dug some large holes on the hillside, and filled them up with an excellent compost for magnolias to grow in, and watered them bountifully during the summer, but they failed to grow. In the autumn he decided to cut a section through one of these holes, when, to his great surprise, he found the compost literally filled with eucalyptus roots, which had wandered more than fifty feet in search of food, and had ruined the magnolias, to the sorrow and anger of my friend.

Let no reader of the HORTICULTURIST think that because we object to the planting of eucalyptus in small gardens we would entirely discard the tree. As we have previously hinted, the tree is susceptible of filling various requirements of California. It is a quick growing tree, forming large forests. Properly cultivated it will yield fire wood in two years, and in seven years we shall have trees fit for timber. If a number of acres are planted, a portion may be cut down each year and they will sprout constantly from the base, so that the "coppice" would continually renew itself. Now we should remember that this quality of the tree is invaluable in many respects. Neither does this tree require the best of our lands. It will flourish well on barren and rocky soils. The eucalyptus is a forest tree, but is *not* a tree for our gardens.

We have called the eucalyptus a destroyer; but trees of similar evil habits might easily be mentioned. *Pinus insignis*, and *Cupressus macrocarpa*, although not quite so gross feeders, form dense masses of foliage, smothering all

minor growths. Both these are beautiful trees in their proper place, but when used inappropriately show a decided lack of taste. We lately passed a gentleman's place of some pretensions, where the sides of the driveway and walks were bordered with large trees, eucalyptus and Monterey cypress predominating. The long, bare trunks of the eucalypti were nearest the walks, and behind them were grouped the heavy cypress, pruned into what much resembled a conical, iron casting! Even the simple change of putting the eucalypti in the background would have been a great improvement; and many handsomer and more suitable trees might be suggested. But wealthy gentlemen too often neglect to obtain proper information on these subjects.

It seems strange to us that gentlemen who would not think of planning a house without the aid of a competent architect, should so often undertake to lay out grounds without the aid of a landscape gardener. A simple lack of knowledge too often ruins the appearance of the drives, walks, and lawns of costly villas. Let us remember that the adornment of our grounds is an artistic problem, just as much as any one of the fine arts, and let us be careful what and where we plant.

If a man attempts to plant his own grounds, he should not fail to ask the nurseryman how large the different species grow, and try to form some idea how they will look when larger.

I have the honor to remain, yours truly,
JOHN ELLIS, Berkeley, Cal.

[The above communication from Mr. John Ellis, who has charge of the University grounds, is worthy of notice, particularly at this season. Every thoughtful horticulturist will call to mind many instances of "Unguided Tree Planting."—EDITOR.]

A GOOD BEGINNING.

EDITOR HORTICULTURIST—Sir: I live in the foothills of Alameda County, and close by a small creek which flows westward. The ground near the cabin in which four of us live has been an old cattle yard, and, until last spring, had never been broken up. Some former tenant (for we rent the place,) has planted a pepper tree and a few Castilian roses. Wild blackberry vines, pink wild roses, and other flowers, cover the hillside, and my children find several kinds of ferns in the shade, near the water.

Ever since we came here my wife has wanted a garden, and tried to grow some plants on the back porch, but some goats we had destroyed them. We have about six hundred head of Angora goats, and some of the common ones, which last are in mischief all the time. My wife kept on trying plants she had bought, but few of them seemed to thrive. The first plant she had anything like success with was what she called smilax. It had firm, dark-green leaves, and it grew in the east window of the sitting-room. Then my wife said she must have a garden.

I fenced in a place about twenty-five feet square, and dug it up. There was a rock about as big as the house on the north side, and the ground sloped to the creek. The soil was deep and rich. My wife bought some seeds in Oakland, on New Year's, 1878, and sowed them the next week. She made little beds close to the rock where it was warm, and kept the surface moist by a covering of leaves. The double dwarf larkspurs and the white candytuft bloomed very soon, I think in April and earlier. The rabbits ate up all the balsams, but I put strychnine in bits of potato, and killed several.

We had salpiglossis, a dark, rich-colored flower; calliopsis, which bloomed wonderfully; a bed of various asters, all double; some nasturtiums, a favorite flower of mine; some everlastings and other flowers. Then we took cuttings of roses, lemon verbenas, and other bushes, and planted them in a sunny bank of sand by the creek. Nearly every one grew, and the roses bloomed last fall. Altogether, we paid \$3.95 for seeds for the garden. I am going to make the yard larger, so as to try and raise some vegetables. What had I better try?—R. S., Oakland.

[Your letter is very interesting, and we hope success will attend all your efforts. If you will pulverize the hard surface well and deeply, you can grow vegetables of the best quality, and thus add much to the comfort of your family. Your soil and location are well adapted to the growth of asparagus and rhubarb. You should buy 50 roots of asparagus, setting them eighteen inches apart, in one or two rows; six roots of rhubarb will be sufficient. Sow a small bed of cabbage and one of cauliflower, in a sheltered, sunny place. Transplant them in rows when from four to six inches high. Start some tomato seed in a box in the house. Sow peas as soon as you can; a few early peas, but mainly marrowfats and wrinkled peas. Make about four successive sowings, at intervals of two weeks. You can sow quite a large bed of blood turnip beets, using the small ones, where you thin out, for greens. A bed of turnips and a small bed of lettuce, radish and carrots is advisable. Parsnips and salsify are of easy culture. Sow in drills and thin out. You had better grow early onions from sets. When the weather is warmer, say in April, you can plant beans and sweet corn, cucumbers and melons.—EDITOR.]

A QUESTION ABOUT THE MAURANDYA:—Mrs. F. M. writes from her home in Solano County to make inquiries concerning the propagation of the rich purple Maurandya, a great favorite of hers. She says that both her neighbors and herself have tried to grow it from seed, but, so far, without success. To this I answer that maurandya seeds often do not ripen well, and are, under any circumstances, hard to germinate. Further, there is no certainty that plants from seeds will come true. Instead of the rich purple of *M. Barclayana*, you will have shades of pink mostly. But the dependence must be upon cuttings taken from the tips of the growing branches. Make them two or two and one-half inches long. Put them in a saucer of moist sand, and treat as fuchsia cuttings. Write us again of your success and of any other gardening difficulties. You ought to have the pure white maurandya to grow on the same pillar with the purple variety.

PLANTS NAMED.—W. C. M., Sacramento.—The plant of which you speak is the *Daphne odorata*, a Himalayan plant, and one of our most enjoyable winter blooming shrubs. It will stand our winters, and prefers some shade in summers.

MRS. J. P.—The branch you send is from *Kennedya*, an old greenhouse shrub. If yours is now "eight feet high and sixteen feet round, perfectly healthy, unprotected by any trees and has bloomed for years," we must congratulate you on your beautiful and valuable specimen.

THE Atlantic forest, according to Professor Gray, is composed of 66 genera and 155 species; the Pacific forest has only 31 genera and 78 species of timber trees.

Farm and Orchard.

NOTES FOR JANUARY.

BY THE EDITOR.

These notes are being written during the last days of December, after everything else has gone to press, so as to give them, so far as possible, the important quality of freshness. Here we shall expect to gather up many lessons of each successive month of orchard and field work, and here, more than in any other department, we shall take a comprehensive view of our agricultural resources, remembering always, however, that our work is that of a monthly.

We are still having cold weather of unprecedented violence. So long a period of drought and cold has not been known for many years, and no other cold spell has found so many rare and costly plants to destroy. It gives one a sad and helpless feeling to pass along the familiar walks, these icy mornings, and observe how many plants seem dead. Yet, when the rain comes, many of our garden favorites will sprout again, and we can make new gardens, hoping that a long term of years will elapse before we have such another siege.

This dry and cold weather is of the utmost value in promoting the operations of orchardist and farmer. Let us forget the garden plants destroyed; let us not take a gloomy view of the future; with simple faith and wise foresight, let us utilize the many advantages of such weather to Californian farmers.

This year the usual working season has really been extended, not shortened. In our wheat regions dry-sowing can go on steadily, as it has for months past, and even continue into 1879. Indeed, there is no other way to obtain the full-

est possible benefit of whatever rain falls this season. The ground may be hard, but more and heavier teams must be used. If we have scanty rain-fall, and a poor harvest the summer-fallowed fields, and those broken up and dry-sown, will show a great superiority over ordinary winter-plowed fields. Good farming is manifest most conspicuously in dry years. The land which is well managed, and "kept in heart," as an old friend used to say, will tide a man over a dry season. In such years thorough cultivation is the key-note of success. It may not supply the lack of rain, but it will bring out all there is in the land.

If there is no more dry-sowing to do, many other things claim attention. This has been glorious working weather for building fences, moving out-buildings, clearing brush, chopping wood, graveling roads, or any other of the many farm operations usually cut short by the early rains, which start weeds everywhere, and keep the teams busy in the regular winter work. As it happens, this season affords time for repairs, and new, long-considered, operations. If the farmer has thought of a bit of drainage to reclaim some neglected corner; or a better division of the farm into fields; or a leveling of some hillock, to render irrigation more satisfactory, now is the proper time. It is enforced leisure from many operations; let the energies of the farmer flow into new channels. The man who crouches over the kitchen fire, bewails the chilly weather, and prognosticates gloomily of the coming season, will not reap the benefits of this winter, or scarcely of any one.

In the orchard, work presses, and there need be no idle hands. Pruning must go on steadily; the branches must be trimmed up for firewood, and hauled

to the house; the refuse must be hauled off and burned, as is the usual practice, or, which is better, piled up covered with earth and allowed to rot slowly into rich soil. On hillside farms, places washed out by the rains may be filled up, and protected against further damage, by these trimmings of the orchard.

The art of pruning is one of those arts which are easy in theory, but in practice, difficult. Every winter professional pruners raid through the country districts, and hack and mangle at many poor orchards. Let no man prune your orchard unless you are fully satisfied that he is intelligent, that he will not saw off large limbs recklessly, and that he uses hand shears and ladder most of the time. The art of the orchardist is to keep clean and healthy trees, as nearly uniform as the nature of the different varieties will permit, having evenly shaped heads, open to permit the fruit to ripen and color well. To attain these points, the method of pruning used is of the utmost importance. A well-shaped tree must be planted at first, and, if it is pruned with judgment each year, no large limbs need ever be sawed off, until the tree's period of usefulness is past, and it is cut down for timber or firewood.

One thing which the orchardist must not neglect, is to examine the whole orchard carefully, to see if there are any dead, diseased, or worthless trees. If so, now is the time to get rid of them. The older orchards of the State contain many worthless varieties, planted before their character was fully known. Apples of value in the Atlantic States have sometimes lost their usefulness here. Unless a Rambo or Seek-no-further is kept for the sake of boyish reminiscences, these poor varieties should all be grafted over, or dug out, and their place supplied by young trees.

The largest demand will always be for winter apples. Nickajack, a red apple of southern origin, and that leading favorite, the Yellow Newtown Pippin, are two of the best keepers.

Another piece of work for these rainless days, is to dig holes for trees, if there is to be an orchard planted, or an addition made to the old one. The ground may seem hard, but if wide and deep holes are dug, so that wind, cold, sunlight, rain, and all vicissitudes of weather can act upon the soil, the trees you plant will show, by their growth, how much they appreciate the situation. Care spent in preparing orchard land is never wasted. Large holes, made loose and mellow in the bottoms; careful planting, with the earth well shaken around the roots, but not trampled; good mulching, and thorough cultivation afterward—these are the essential points.

When the orchard is made ready for the coming rains, there is another important class of work to be taken up. The farm implements need care. Bolts need tightening, oiling, and covering with coal tar. The wood-work of wagons, cultivators, plows, seed-sowers, harrows, threshers, reapers, and all tools at any time exposed to the weather need a coat of paint or oil. Even hoes, rakes, and spades will amply repay this treatment. In our dry climate, wood-work splits, warps, and soon becomes unfit for use, unless amply protected. We must meet hard times with redoubled economy; our farm tools must be made to last longer.

These may seem trite remarks; the gist being simply to keep at work, to make improvements, to utilize these wintry days. But successful farm and orchard work is very little besides a careful attention to particulars, and a use of every moment. The editor of

this or any other monthly can only suggest, collect information, and try to make idle folks more ambitious. The farmer must himself realize the need of energy, and the importance of utilizing every resource. If he does, he will in some wise win success; and no unfavorable season can ruin him beyond recovery.

OLIVE ORCHARDS IN SPAIN.—As there are few commercial nurseries in Spain, most of the planters have to raise their own trees. They usually plant the cuttings in the place that the trees are to remain. One method is to take cuttings five to eight feet long and two inches in diameter at the bottom. These are planted from two to three feet deep. They usually take root and grow, forming a good head in two years. The ground around them is kept well stirred and watered when dry. A cone of earth is formed around the stem, usually as high as four feet, to keep it cool and moist, as the sun has great power. The effect of the sun upon the bodies of fruit trees is much the same there as in our State. Whenever a tree becomes unhealthy from want of cultivation or drought, the sun soon burns the stem. The olive can be propagated by cuttings, layers or *uovoli*. For practical purposes the cutting is the best. They can be put in nursery rows and grown several years, usually making a tree large enough to plant in the orchard in three years. Some varieties which do not strike very readily can be grafted upon the 'common one. The layers can be taken off from the "mother plant" after one year and planted in nursery rows one or two years, when they may be planted out in orchard.

The *uovoli* or embryo buds are little knots which form upon the bark, especially upon the upper roots. They

are only found upon trees of ten or more years. They should be taken off and planted like bulbs. They form the young tree. There are but two kinds grown in Spain that will be of any value to us; the common or Moorish for oil, and another for conserves. Those which I judged to be the best were in Granada and Andalusia. They were larger and finer in every respect than any other that I saw in Europe. The French have many kinds, and, in view of the varied character of our soil and climate, I have procured a few of their best varieties, as well as the Spanish kinds.

As an instance of the vitality of this tree, I will mention one that I saw near Malaga. It was supposed to have been planted by the Moors at least 400 years ago; it had been grafted, but a sucker had sprung from it near the ground and formed a tree as large as the original. There was a good crop upon it, and as far as the appearance of the tree indicated, it might live as many more years.—W. B. WEST, in *S. F. Weekly Bulletin*.

SEEDLING PEACH TREES.—One of our subscribers sends us the following item: I had a number of seedling-peach trees, which I cut or headed back regularly; I supplied them with abundance of potash, and gave them good treatment in every way. They were selected promiscuously from the lot, without reference to quality, really being no better than the rest. This season all bore, and the trees properly treated bore peaches eight and nine inches in circumference; and a common remark of observers was that I "had some fine budded peaches among my seedlings." I thinned my peaches and got better fruit and more of it. This shows that cultivation has much to do with the quality of any fruit.

Editorial Department.

TO THE PUBLIC.

The CALIFORNIA HORTICULTURIST has done some good work in the past; we hope that now the time has come for it to do much better work, and, in fact, to become more distinctly a recognized authority in its own department. No foreign journal, howsoever ably edited, can ever entirely meet the wants of our nurserymen, florists, pomologists, and lovers of beautiful homes. We must, by thoughtful experiments, and a comparison of notes from many sources, develop the wonderful capabilities of our soil and climate. While in no sense a rival of our agricultural weeklies, the HORTICULTURIST aims to render itself indispensable to all who are interested in the art of gardening, or in the science of botany. We shall give space every month to a consideration of our native plants, and of new or promising importations. Nurseries, nursery work, and practical gardening will occupy much of our attention. We are persuaded that an earnest and honest horticultural journal can and will be supported on this coast.

We are already promised, for the present volume, a number of contributions from our ablest nurserymen, botanists, and horticultural writers. We also invite busy people to send us short, practical notes, questions, and items of interest. Everything which bears upon our climate and the treatment of different plants is of importance. Observations in botany and natural science will always be welcomed. We also ask our local botanists to send lists of the native plants of their respective localities.

Every good horticultural journal must have much to do with the homes of the

people. In so far as in us lies, this journal proposes to give valuable hints on conservatories, rockeries, lawns, flower gardens, and everything which brightens and purifies the home. That we grow up a State of flower-lovers is something much to be desired. Tree, shrub, and flower planting on this coast are but in their infancy. The HORTICULTURIST proposes to help in their development.

In conclusion, it may be well to add that my own interests in the nursery business will never be allowed to appear in the pages of this journal. The example of Thomas Meehan, of Philadelphia, is proof that they can be kept entirely separate.

Yours truly,

THE EDITOR.

BETTER THAN STOCKS.

Shares of mines on the Comstock go up, and ruin one set of operators; they go down, and destroy another set; each movement of stocks means some luxury or comfort, or necessary of life, taken away from some family. We all remember this year, and last year, and year before, the crash of some wealthy man, the ruin of some pleasant home, the desecration of some tasteful garden. Next year, and year after, we shall hear the same stories and see the same desolation.

All this while here, as in no other known region, horticulture has endless possibilities, and invites men to leave their stock-deals, excitements, and illicit gains, to breathe again, as children, the purity of our perfect atmosphere, and to vie with each other in the quiet and holy domains of nature. Whoever lives by farming, fruit culture, gardening, forestry, and nursery work, will have quiet thoughts and pleasant dreams; whoever tries to live by stock-

gambling will have heartache and sorrow, for this is nature's law.

It is the field of out-door beauty and rural happiness which this monthly aims to cultivate. We would carry tired men back to their hours of childhood; we would sweeten their lives with a breath of lilies and roses; we would have these pages hint of robins and fluttering butterflies, of mountain slopes and deep ravines, of cultured gardens and well-tilled farms, and fruitful orchards. We would have the idea we represent grow and gain strength until no man ever risks his home on a deal in stocks, and until California is a land of vines and flowers, continual beauty, high culture, and noble art.

WANTED--A HORTICULTURAL SOCIETY.

One of the things for which we shall earnestly labor, through the pages of this monthly and otherwise, is the establishment of a Horticultural Society in or near San Francisco. We need some place where all the friends of horticulture can meet at least once a month, renew old friendships, and discuss the science and practice of their work. We need a well-organized society to encourage the production of improved varieties of fruits and flowers; to give occasional exhibitions of marked excellence; and to disseminate horticultural knowledge. The future of horticulture on this Coast was never so bright before. If men of wealth and standing in the community will take hold of this matter in a quiet, practical way, our long-desired horticultural society will soon be an accomplished fact.

The difficulty heretofore has been in a lack of popular and unselfish leaders. Our nurserymen and florists are friendly

in their business dealings; our wealthy garden-lovers are every year becoming more interested in the fruits and plants adapted to this Coast; there is nowhere any lack of individual zeal and energy. Yet once, some years ago, a certain historic institution, known as the "Bay District Horticultural Society," was organized, lived a few years, and died a natural death.

Concerning the history of that Society it is not our province to speak. But it appears evident that a little more zeal and hearty good fellowship would have insured its existence to this day, and have saved this great city the disgrace—for disgrace it is—of not being able to maintain, in this land of fruits and flowers, a single successful horticultural society.

A short history of another horticultural society will serve to enforce our remarks, and point our moral. Los Angeles has the honor of possessing a successful society, which publishes the well-known *Southern California Horticulturist*. This journal enters upon its second year with a certified circulation of 1,200, five hundred and seventy-seven of which are taken in Los Angeles. The Society built, last year, a Horticultural Pavilion, towards which members and friends contributed over \$6,000, and gave a successful Fair. As we understand it, the best farmers, orchardists, nurserymen, viniculturists, and wealthy amateurs of our southern counties have taken hold of this good work.

Now we have, within a radius of forty miles from San Francisco, a large, wealthy, and progressive population which can as easily organize and support three horticultural societies as Los Angeles can support one. Have we no pride in the matter, no hope in our own future, no enterprising and

capable men to act as leaders? Will not our most trustworthy horticulturists consult with each other and arrange a definite plan?

A WARNING TO OUR NURSERYMEN.

The nurserymen of the Pacific Coast are, as a rule, careful and energetic men, who raise good trees and deal fairly with their customers. Our soil and climate are such that although we can not always grow our own seedlings, yet we may hope to compete with the nurseries of any other section. Our apple, pear, peach, plum, cherry, and other fruit trees, are larger at one and two years than Eastern stock at two and four years, and we are supplied with the newest varieties.

We ought, therefore, to be able to control the trade of this coast, and of the adjacent Mexican and South American States. Railroads are opening up new sections north, east, and south of us; the demand for trees is yearly increasing. Are we prepared to meet it?

It is a well-known fact that within the past few years large quantities of trees have been shipped to this coast from Eastern nurseries and sold through agents, by the seductive influences of highly colored plate books. Northern California and Eastern Oregon have been the favorite field of these men, but they do not appear to have slighted any section. Last winter Eastern houses made large shipments of trees to Arizona, via San Francisco, and sold them through agents, at high prices. Mexico has been entered by way of Vera Cruz, and our Eastern friends, with truly commendable enterprise, do not propose to neglect the Pacific States of South America. We hear also of shipments from New York direct to Japan, China, New Zealand and other places more directly within our reach.

What are our nurserymen doing to extend their trade in these new directions? Are we fully aware of our own advantages of position? How do we propose to hold the enlarging trade of our Pacific States, and also to gain the trade of our Spanish-American neighbors? Are we laying aside every jealousy, forming business associations, and extending our influence? If not, then why not?

It is now evident that we must have a sharp outside competition. For years we have done a local business, but now we are in the full current of the world's affairs, and it rests mainly with ourselves whether we shall make Oakland, San Jose, Los Angeles, and other points, commercial centres of extensive business, or hereafter take only a subordinate place. We must grow more trees, and more cheaply. That is the problem.

THE GARDEN IN JANUARY.

The gardening work of this month varies in importance with different seasons. When our rains begin early, December is decidedly the busiest month of the two; but when the rains delay their coming, as they did last winter and also this, everything seems to be crowded into January and February. One of the first things to be done now, in many cases, is to take the pruning shears and go around the garden, cutting off all frost-killed tops of plants. Geraniums, fuchsias, heliotropes, etc., notwithstanding the severe cold of last month, will seldom be found irrecoverably dead. The foliage and lesser branches protect the latent buds of the main stem. Our warm rains and occasional days of sunshine will do more to start these latent buds into vigorous growth if the dead branches are cleared away. In the bay counties we need

not fear any further frosts until after the rains are past. Then the young shoots from plants whose tops are killed now must be covered with religious care and reverence, every night for a couple of weeks or so. In ordinary winters, well-established plants live through without any trouble, but if we will grow tender plants in our gardens we must give them more attention when these unusually cold spells come.

The work of taking cuttings should progress rapidly during this month. Roses and deciduous shrubs must be taken early, or a large percentage will fail. Make cuttings of well-ripened wood from eight to twelve inches long. Set in the ground a little sloping, so that two buds are out. While trimming the garden, save a few cuttings of choice plants and thrust them into the ground close by the plant from which they were clipped. If the ground is moist, they can remain there without injury for several weeks, or until there is a cutting bed prepared. Nurserymen grow many plants from cuttings set in long rows, and given ordinary field treatment; but the owner of a small garden can not follow that plan. The best thing for him to do is to choose a warm and sheltered locality, and make a "cutting bed." Dig in plenty of sand. Label everything. Have water handy, and do not let them get dry. This, owing to the more even warmth and moisture obtained, will be found a better plan than the system of striking cuttings in boxes, preferred by many.

The sowing of hardy annuals and other flower seeds ought to go on. Perennials, in particular, ought to be sown early. *Aquilegia* (columbine), if sown now, will germinate with the greatest ease, but it usually fails when

sown in summer. *A. chrysantha*, the golden-yellow variety from the Rocky Mountains, is one of the best. We like the old orange-red *A. canadensis*, and indeed most of the single ones. The double white and double blue are rich, clear and beautiful; the other doubles are sad-colored, and verge upon failures. A bed of aquilegias for a cool, shady, northern slope is one of the things we always recommend. A hundred plants are not too many in a large garden, but let most of them be single ones.

This month ought to be a busy one in the vegetable garden. When the rains are heavy and prolonged, the small beds used for vegetables ought to be made high and somewhat rounded, so as to afford good drainage. Later in the season the beds should be more level. After each rain stir the surface with a fine-toothed rake. This advice applies also to the flower garden. Great caution must be used where bulbs are planted, as most of them will be broken off by a careless stroke from a hoe or rake. If the bulb beds are covered with fine sand to avoid cracking of the soil, they need never be touched otherwise than to pull up weeds, and it is much the best method of culture. The crocuses, early tulips, oxalis, grape hyacinths, and our small native bulbs, such as *Brodiaea coccinea*, will begin to bloom early this month, if planted in the proper season.

If clumps of herbaceous perennials in the garden were not divided in November or December, that work may still be done, unless the flower spikes are pushing up, in which case leave it. In dividing, use a sharp knife, and do not try to make too many pieces. If a person tries to pull a clump of roots apart it is apt to break at the wrong places, and ruin some of the buds.

Often an old and seemingly neglected plant will take a new lease of life if carefully divided up and replanted.

THE VALUE OF TIMELY PROTECTION.

The second week in December was characterized by a cold spell of marked severity. We hear sad news from every part of the State. Plants in their nature tender, which have stood several successive winters, have succumbed. Yet we had sufficient warning. The clear, cold atmosphere, and dry north winds, ought to have prepared us for severe frosts. In Alameda County lime and citron trees were killed nearly to the ground, lemons suffered, and also irrigated oranges. We learn that orange buds in Los Angeles County have been injured. In most cases, however, a covering of straw has protected fuchsias, geraniums, and similar plants. Use wisps of straw tied around the trunk for trees, and cover the top with a cloth.

A FEW MORE OF OUR PLANS.

The CALIFORNIA HORTICULTURIST has a great many bright plans for the future; and, if our friends will only help us, they shall all be carried out. Sometime, in the not very distant future, we expect to find some seeds of something very pretty and rare to give to our subscribers.

Then we expect to find more and more bright persons who love horticulture, and can tell us of their failures and successes; there will be botanists of Coast Range and Sierra, and window gardeners, and floriculturists, and algæ-lovers, and a host of nice people willing to give us information. Then we shall have, before many months, letters already promised from out of the way places—Mexico, New Zealand, Japan.

We remember, also, how much children love flowers; in these pages, therefore, there shall often be something concerning a child's garden, something telling what children can plant with the most satisfaction. We would have a word for each member of the family, a home-like suggestion for farmer and artisan, and merchant, for busy wife and merry child. Beneath every roof-tree and every fireside we would become a welcome visitor, bringing the freshness of nature, and the suggestions of rural art.

WE ARE CONDOLED WITH.—“With the December number of the *California Horticulturist*, comes the announcement, that Chas. H. Shinn, whom our readers will recognize as an occasional correspondent, assumes editorial control. Mr. Shinn is an able and vigorous writer, and we welcome him to the new field of labor—a field, as all editors know, that is strewn with flowers and choice fruits, with neither thorns, brambles, Canada thistles, nuggets nor diamonds to mar his happiness. Brother Shinn, accept our condolence.”—*Southern Cal. Hort. for Dec.*

We have been prepared to expect some curious editorial experiences. But we hardly thought any friend would offer his “condolence” upon our entering so charming a field, where there are “neither thorns, brambles, nor thistles.” Now really, wouldn't “felicitations” be much better, brother Holt?

MR. J. B. HICKMAN has kindly sent us a printed list of the native bulbs, shrubs, and seeds which he has collected in San Benito and Monterey counties. Mr. Hickman is an enthusiastic botanist, and one of our friends in the days when we taught school.

Editorial Notes.

STANHOPEA OCULATA, AND OTHER ORCHIDS.—

This rare orchid, a native of Guatemala, is now in bloom, for the first time on this Coast, at the nurseries of John Rock, San Jose. The drooping masses of bloom push downward through the basket of moss in which the plant grows, attaining a length of eighteen inches. Among other orchids we noticed *Oncidium Cavendishi*, with unusually large and healthy flower stems, a little past their prime; *Odontoglossum grande*, with its compact, dwarfish growth, and immense spotted flowers; and the curious orchid, *Oerides Japonicum*, which is a native of a cold region. These orchids and others show careful treatment.

CLERODENDRON AROMATICUM.—

Several of our nurseries have quite a stock of this fragrant and free blooming plant, which appears well adapted to our climate. Its habit of blooming when quite small is a great recommendation, and the double, lilac-colored flowers, borne in close heads, make this the best of *Clerodendrons*. We should think that nothing could be better for a house or window plant.

SOME HANDSOME FERNS.—

Adiantum amabile has a lovely, fountain-like method of growth, and well deserves its name. *Gymnosgramma Wettenhalliana* is much more graceful than its polysyllabic name. *G. Peruviana agriophylla* has a silvery leaf. *Davallia elegans*, *D. Mooreana* and *D. dissectata*, while varying in their modes of growth, yet possess a family resemblance, and are very desirable conservatory ferns. *Niphololus lingua cristata*, a new fern from Japan, is remarkable for the crumpled tuft or crest at the extremity of each leaf, from which it obtains its specific name. These ferns, also, were grown by John Rock, of San Jose.

THE "Garden" speaks of *Poinciana pulcherima*—

for covering a wall in a warm greenhouse. The leaves are like those of *Reidia glaucescens*. The flowers are in showy orange and scarlet terminal clusters.

THUNBERGIA HARRISII.—

This green-house climber, a native of Moulweine, where it often fills the jungle, is always desirable. One we lately noticed has been in constant bloom for months, and its masses of trumpet-shaped flowers are a marvel. In color the limb of the corolla is purplish blue above, pale beneath, fading to yellow and white at the throat. As a mere matter of personal feeling we confess that we greatly admire this plant.

CYANOPHYLLUM MAGNIFICUM.—

We lately admired some specimens of this glorious foliage plant, whose large, heavily-veined leaves, stately growth, and pleasing combination of colors render it so dis-

tinct an object. It is unrivaled for a conservatory, where proper care can be given. It belongs to the natural order *Melastomaceae*. Concerning its treatment, we remark that it is liable to be attacked by insects, and must be kept in a constant state of growth, fed with rich compost, and occasionally watered with tobacco water if insects appear. It is propagated by cutting up the main stem into eyes, or short pieces. Another method is to cut a plant back, and put it in a hot-bed until side shoots start. Then take these off, each with a small piece of the old stem, and root them in sand with a little bottom heat, covering them with a bell glass.

PINUS INSIGNIS IN ENGLAND.—We notice that a correspondent of the *Garden* calls our well-known Monterey Pine (*P. insignis*) a "most beautiful and fast-growing conifer," and states that it deserves extensive planting.

PLUMBAGO CAPENSIS IN LARGE GROUNDS.—

This free-blooming and graceful plant is capable of glowing effects in masses, or pegged down closely on the lawn. There is an air of grace and refinement about its growth, and the porcelain blue flowers are all that can be desired.

PERENNIAL PHLOXES.—

The brilliant Phloxes, which bloom from July to October, are, we observe with pleasure, coming more into use every year. Nothing else can be relied on for so gorgeous a display in masses, and our wealthy amateurs can have no better plant for a circular bed on the lawn. Kinds may be chosen for a ribbon bed ranging in height from fifteen inches to four and one-half feet. Bernard S. Fox had a fine assortment in bloom, last season, at his nurseries in San Jose, and we notice good clumps in many private gardens.

INCREASE OF GLADIOLI.—

The gladioli are eminently adapted to our climate, and ought to be more widely used. Last fall, taking up a bed of named varieties, John Bull, Juno, Ariadne, and a number of others, we could not help noticing how much they had increased. Single bulbs were planted last spring, and each one had produced three or four large blooming bulbs, in some cases even six, besides a handful of bulblets. It is safe to assert that the gladioli will grow in closer quarters, and survive more neglect than almost any other flower; while, on the other hand, it will amply repay generous treatment. We prefer to make a succession of plantings. The first lot are put in before our early rains, or towards the last of October. Successive plantings follow in December, February, and April, or even as late as June. That this is some trouble we frankly admit, but without some trouble no garden can long endure.

SELF-SOWN WHITLAVIA GRANDIFLORA.—

The *Whitlavia* is one of our charming native plants, and its blue campanula-like flowers are much admired.

In any moist soil it self-sows, and keeps a succession the year round. Our little bed of three feet square has not lacked flowers for eighteen months past.

PRYAL'S GOLDEN CYPRESS.—During a recent visit to the nurseries of A. D. Pryal, on the Temescal Creek, some four miles from Oakland, we observed, with much pleasure, the original tree of this new variety. Pryal's Golden Cypress is a seedling of marked character, from the well-known *C. pyramidalis*. The deep yellow blotches run into the branches, and even show on the cones. The compact growth and evenly distributed variegation, make this a promising novelty.

NEMOPHILAS.—*Nemophila insignis* and *N. discoidalis*, from self-sown seed, bloomed in our garden the last week in November.

DISEASED PELARGONIUMS.—Who can tell us the trouble with a pelargonium which suddenly withers as if blighted, and thereafter goes the way of dead plants? From friends in various counties we hear mournful tales. Large-flowered geraniums of seemingly thrifty growth, die in the middle of summer. The leaves shrivel up, and when cut back, the pith of each stem is decayed. The roots are likewise shriveled. Indeed, the main trouble seems to begin with the roots. It seems to us, from the best light obtainable, that injudicious watering is the main cause. In some way a rapid growth has been suddenly checked. Spasmodic irrigation—first too much and then too little—is a fruitful cause of trouble. We shall be glad to hear from others on this subject.

THE AKEBIA QUINATA.—This quaint and graceful vine from Japan is perfectly adapted to our climate, and should be much more widely known. From some reason or other no nurserymen, so far as we know of, had it here until a quite recent period. No one in search of a desirable evergreen vine will go astray if they buy an Akebia. Its qualities, as far as revealed, have been absolute freedom from disease or insects, rapid growth, glossy leaves and interlacing tendrils, and fragrant, chocolate-colored blossoms, in perfection during the early spring months. The rich and velvety appearance of their flowers is quite indescribable.

ALPINE GARDENING.—A properly built rock-garden is one of the most beautiful of objects. If the fragments of rock used are irregular and moss covered, such as may be found on the shady slopes of our hills; and if they are built up so as to secure a series of compartments in which plants of different kinds may be placed, a natural and intelligently-arranged home for Alpine plants may be obtained. Besides planting some species in these little openings many rare plants will grow from small crevices in the stones themselves, and, although somewhat dwarfed, will be much healthier. Echeverias, saxifragas, and androsaceas push their fleshy roots

through the smallest opening. When a large rock-garden is well established, and partly covered with larger plants, it will prove interesting to sow seeds of our native hillside flowers, and plant our small native bulbs in the interstices everywhere, so that they shall maintain a curious, slowly-growing existence.

A RECENT LILY DISCUSSION.—Now and then some horticultural writer hits upon a subject of such universal interest that he is at once attacked and defended from a dozen directions; and, if he stands by his guns, will inevitably have his hands full. A few months of rather lively cut and parry usually brings a vast fund of dormant information to light, and clears the atmosphere wonderfully. Our English friends are quite apt to do this sort of thing; and we notice that "Dunedin," "T. Baines," and others, have recently been discussing the treatment of lilies in the columns of the *Garden*. "Dunedin" believes in moving lilies as soon as the flowers have faded, and he objects to encouraging the growth of stem-roots. We differ with this portion of his treatment, although we agree as regards the decay of the old bulbs, and the formation of new ones internally. We think that, with us, if fine Japan lilies are desired, some top dressing and good mulching is necessary. We would move lilies early in November, the stem being then withered. As an example of this treatment, we last season had *L. auratum* with forty-one perfect blossoms, and *L. speciosum* with sixty, both being grown in the open ground.

OUR WILLOWS.—As Dr. Anderson suggests, we need a monograph of the willows. It is strange that so few men have toiled in this department, and we hope that our botanists will work faithfully on our native species. The English journals have been lately publishing some fine monographs on the alder, beech, and other families.

THE COLLECTORS OF OUR NATIVE PLANTS, SEEDS, AND BULBS.—We know some of these earnest and useful men who search our deep ravines and great forests, and we have a very sincere affection for their work. They wander in Nature's "wild garden," and live fresh, hearty lives. They may, if they will, draw nearer to the gentle birds, and loving flowers, and snow-crowned, billowy mountains, than we of the valleys ever can. So we hope to know them better, and to be told of their wanderings and botanical investigations.

THE "TARO" PLANT.—Mr. Agapius Honcharenko of Alameda County, informs us that he is testing the Taro plant (*Colocasia macrorhiza*) so common as a food plant in the tropics. His location is in the foothills, and extremely well sheltered. The plants grew rapidly last year, and survived the cold weather of our winter months. We are promised a plant for experiments in the valley, and progress will be noted.

Pomological Notes.

THE JEAN DE WITTE PEAR.—This winter pear has been fruited this season in Alameda County. Ellwanger & Barry's description is—"Origin, Belgium; size, medium; season, December; texture, juicy." It accords well with this description, the pears being gathered on the 7th of December, and still remaining sound December 20th. The quality must be called good. The pear is, in shape, size and color, much like the well-known White Doyenne except that it is somewhat more pyriform.

THE BLACK DETROIT APPLE.—This apple, which we have noticed in several orchards, but not to any extent in market, bears well, and is very handsome. It agrees mainly with Downing's description, but is of rather better quality, and keeps until January, or nearly three months later.

PUTAH CREEK ORANGES.—Mr. Rixford, of the *Bulletin*, whose recent interesting article on species of Palms will be remembered with pleasure, has shown us samples of Putah Creek oranges which reached this market far in advance of the Los Angeles oranges, were of better color and superior flavor, selling, as a matter of course, at much higher rates. Los Angeles will doubtless continue to furnish the main crop for years to come, but the warm and frostless valleys of the interior present many advantages, and highly colored Christmas oranges will always be profitable.

New & Desirable Plants.

[We shall glean from our exchanges and correspondence, notes on plants either new, or of promise in our climate. Our nurserymen are invited to send notes on any interesting plants received.]

ARISTOLOCHIA TRILOBATA.—This singular species is figured in the *Botanical Magazine* (plate 6,387.) Sir Joseph Hooker states that two species of Aristolochia, from South America, characterized by the wonderful tail at the tip of the perianth, and curious spurs at the base, have been cultivated in England, and confounded with a third (*A. caudata*) which has not yet been introduced. These species are, first, the old *A. trilobata*, of Linnaeus's first edition of the "Species Plantarum;" secondly, *A. macroura* (Gomez), a Brazilian species, figured in the *Botanical Register* under the same name. The true *A. trilobata* is a very slender climber, with three-lobed, stalked leaves of a bronze green, relieved by the reddish tinge of the principal nerves; those on the flowering branches are about two inches across. The flowers are borne on stalks rather longer than the leaves, and are of a yellowish green traversed by red lines, the mouth bristly and spotted with a brighter

red, and the long tail of a rich brown; altogether the perianth of the flower is 3 inches or more in length. —W. B. HEMSLEY, in "Garden."

MAMMILLARIA LONGIMAMMA.—This very curious species, which resembles some of the Echinocacti, grows on the table lands of Trinity County, and northward. It bears large yellow flowers, and should be used on rock-work.

DAPHNE BLAGAYANA.—Our European exchanges speak so highly of this new plant, which was first found in Carniola, that we hope some of our nurserymen will test it here. It was figured in No. 354 of the *Garden*. From its habitats, Carniola and Styria, it should suit our gardens. It is said to be easily propagated from layers.

ASPARAGUS PLUMOSUS.—This is a climbing under-shrub, with very numerous, slender, glabrous green spreading branches. The true leaves are in the form of minute deltoid scales with an acute ultimately reflexed point. The cladodes, or false leaves, are grouped in tufts, each one is from one-eighth to one-quarter inch long, bristle-shaped, and finely pointed. The elegance of its finely-cut false leaves rivaling or even excelling the most delicately cut fern, will render this plant a great favorite, and for decorative purposes, bouquets, etc., it will have the advantage of greater persistence than ferns.—*Gardener's Chronicle*.

A BLUE PRIMROSE.—The *Gardener's Magazine* says: "A blue primrose was exhibited by Mr. G. F. Wilson at South Kensington, under the designation of *Scott Wilson*. The flowers are large, stout, of good form, and of a rich deep blue color. It is so remarkably distinct in color that it must be regarded as a most valuable addition to the list of hardy primroses now in cultivation under distinctive names."

HYDRANGEA PANICULATA.—Very few, if any, late introductions for the garden and shrubbery please me so much as this hydrangea. Hardy, very easily propagated, very showy, lasting a long time too, it has few rivals; profuse of bloom, changing from white to purple or red, it is continuously elegant; after two or more years growth it is little less than superb. Coming, too, about the 1st of August, when blooming shrubbery is mostly over, I constantly wonder why it is not more abundant in pleasure grounds.—J. J. S., in *Gardener's Monthly*.

TRICHOSTEMA LANATUM.—This rare and handsome plant of Northern Mexico has been found growing out of its usual range in the central mountainous portion of San Luis Obispo County. It was figured and described in a Smithsonian report some years ago. It forms a very picturesque small shrub, with contorted branches, and twisted, narrow leaves of gray, veined with green. A bank of gravel, or a

crevice in the face of a rock, exposed to the full blaze of the sun, is its favorite location. When the flower-spikes, which are very numerous, begin to show themselves, they are almost hidden in a white pubescence, which gives the name *lanatum* to the plant. The flower spikes are like those of a drooping *salvia*, from six to nine inches in length, and of a reddish purple color, changing to a dark purple, and remaining in bloom a long time. The stamens which are indefinite, form the marked feature of the inflorescence, for they extend over two inches out of the flower in a drooping, brilliant mass of rosy-red color; so that this, relieved against the white, wooly stalk, makes a striking object.—C. H. S., in *Garden*.

ECHEVERIA DE SMETIANA.—The *Garden* says that this is a great improvement on *E. secunda glauca*, forming a compact rosette, with bright silvery leaves, and a narrow edge of rose around the outer ones. We might use it here for carpet gardening.

CROTON DISRAELI.—This new croton, figured in the *Gardener's Monthly*, promises to be an addition to the foliage plants. The leaves are trilobate, with a long, expanded middle lobe; the colors are at first light yellow blotched; afterwards the yellow deepens, the margin becomes a bright scarlet; this being on a ground of deep green.

ABUTILON ANNA CROZY.—This new abutilon has very large flowers; color, a purplish rose; habit, neat; a good bloomer; origin, France.

MASDEVALLIA VELIFERA.—The number of species now known of the genus *Masdevallia*, is so great, and the variety of forms and colors so diversified, that it is difficult to make a selection. Only one species was known to the author of the genus. Lindley describes only three in his "Genera and Species." In 1861 Reichenbach described thirty-six, and since then no less than fifty additional species have been discovered, most of which are in cultivation. The present species, *M. velifera*, was discovered in New Granada. The flowers are green outside at the base, shading into brown upwards, and yellow on the borders; brown inside; petals, light green; lip, dark brownish-purple; whole flower shining as if varnished.—W. B. HEMSLEY, in *Garden*.

ALOCASIA BATAVIENSIS.—The peculiar bluish-green shade of the leaves and stem of this decorative plant render it a striking object. We recently saw a fine specimen at W. F. Kelsey's, Oakland, where we also noticed large plants of *Sanchezia nobilis*, whose drooping leaves, so heavily ribbed across with distinct yellow, always attract attention.

PROPAGATION OF CENTAUREA RAGUSINA, CANDIDISSIMA, GYMNOCARPA, ETC.—These are considered very difficult to manage, but the propagation is a very simple matter when you know *how to do it*. As the centaureas are the grandest of all the silvery

leaved bedders we possess, and among the most aristocratic plants known, a paragraph on their propagation will probably be acceptable both to private growers and to many in the trade. One difficulty is to get shoots long enough for insertion in the soil of the cutting pans. This difficulty is to be got over by taking plants into the greenhouse in January, ten days before making the cuttings. The heat will strengthen the shoots; and, as soon as they are long enough to cut, take them. The soil for the cutting pans should be peat *without the fibre* one-half, silver sand one-half; mix this thoroughly, and then put it in an oven and *let it bake, but not burn*, till completely dessicated. Dibble in the cuttings, and put bell-glasses over; keep on bottom heat; give no water for three weeks; then wet them moderately, and they will throw out shoots immediately, and, a week after, may be potted in thimbles or thumbs.—*Floral World*.

THE *Popular Science Review* ascribes the discovery of the eucalyptus globulus to Labillardiere, in the voyage undertaken with the object of searching for the famous Admiral La Perouse, in 1792.

LILACS.—It is a matter of surprise that the fine varieties of lilacs now in cultivation, such as the magnificent dark-colored kinds, named Dr. Lindley and Charles X., are not oftener planted in preference to the very inferior older kinds of common lilac, which they excel as much as the plant usually grown as Persian lilac, but which appears to be the Rouen variety (*rothamagensis*), does the comparatively puny-looking type of *Syringa persica*.—*Florist and Pomologist*.

GREENHOUSE LYCOPODIUMS, OR SELAGINELLAS.—People very often fail in growing these beautiful and easily managed plants through exposing them to the same amount of air and light as the hard-wooded plants. The delicate foliage will not stand rough treatment with impunity; for it soon assumes a brown, rusty color, to prove to the cultivator that the plant is not receiving the right kind of treatment. These plants are propagated by cuttings and division, and thrive best in pans about six inches deep, well drained, and filled with a mixture of fibry peat, loam and leaf-mold in equal proportions, with plenty of sand. There are many more splendid kinds; but these are the most suitable for the conservatory: *Selaginella apoda*, a pretty, little dense-growing kind, requires care in watering, otherwise it will go moldy in the centre; *S. denticulata*, the old common kind, but very beautiful and free-growing—one of the most useful we have; *S. formosum*, a fine kind, the habit close and massive-looking, very easy to propagate, and grows about a foot high; *S. Martensii*, a fine, erect, close habit, same height as the preceding; *S. cuspidata*, a very beautiful growing kind—foliage forms quite a bird's nest; and *S. Wil-denovii*, a fine-spreading kind.—*Floral World*.

Reviews and Exchanges.

[All books on subjects in any way connected with horticulture will be reviewed in this department. Publishers are requested to state the price of each book sent.]

FLORAL DECORATIONS FOR THE DWELLING HOUSE.

A practical guide to the home arrangement of plants and flowers. By Annie Hassard. Macmillan & Co., American edition revised.

A. L. Bancroft & Co. have laid this book on our table, and we have read it from cover to cover, for the mere pleasure of the thing. The first attraction lies in its typographical appearance, and many illustrations, furnished partly, the author tells us, by the kindness of Mr. Robinson of the *Garden*. These are, however, as they should be, subordinate beauties. Each chapter is simple, practical, full of rare suggestiveness, and indicating years of experience in the arrangements of plants and flowers. We have never before seen the decoration of tables so clearly explained, or so much of the artistic sense brought to bear upon button-hole bouquets, coat-flowers, baskets, vases, etc. There are people whose bouquets never harmonize, or who are not sufficiently aware of the infinite variations possible. To all such we commend this book, and we are also sure that no flower-lover can fail to find hints in every chapter. We read with particular interest the chapters on wiring and arranging flowers or leaves, and keeping them fresh for exhibitions or other purposes. The chapters giving lists of flowers, and vase arrangements, for each month in the year, may also be studied with profit, although requiring to be somewhat modified for our climate. To study this book will not make one at once a flower-artist, but without a knowledge of the laws of harmony and arrangement which the author so clearly states and illustrates, no one can ever hope to reach that consummation. If our pages are not too much crowded with original matter we may sometime give a short quotation from this pleasant book.

"THE BLESSED BEES." By John Allen. G. P. Putman & Sons, New York; A. Roman & Co., San Francisco.

Some years ago the book market was flooded with horticultural novels. We had "Ten Acres Enough," and then a burlesque, "Five Acres Too Much," followed by "Three Acres Enough," and other works of a vivid fancy. These books were valuable in so far as they made people realize the capacity of a small piece of ground, and they were detrimental in so far as they smoothly exaggerated the profits, and failed to allow sufficiently for unavoidable mistakes.

This book, "The Blessed Bees," belongs to the same class of imaginative literature, and may, with great propriety, be called an apian novelette. We are unable to decide how closely the narrative and exploits of John Allen may apply to the conditions of apiculture in Michigan. But our Californian

apiarians can learn little from this work, and the present profits of honey are far below the figures given.

TRANSACTIONS OF THE CALIFORNIA STATE AGRICULTURAL SOCIETY FOR 1877.

This neat volume of 159 pages, has recently been issued. In addition to the usual reports of directors, financial reports, lists of exhibitors, and of premiums awarded, several unusually valuable articles and addresses are included. The Diagram of Rainfall for a term of years, prepared by Prof. G. F. Becker of our State University, was a valuable contribution to the subject, and we are glad to see it preserved in this more permanent form. The Hon. B. B. Redding furnishes a paper on the climate of California, which has already been widely copied and quoted from. The closing essay is one on forage plants, by C. H. Dwinelle, Ph. B., Berkeley. Mr. Dwinelle rightly examines our native grasses and considers their value, so that his work is fresh, and far removed from an ordinary compilation. A good word is also spoken for the carob tree (*Ceratonia siliqua*, L.) We hope Mr. Dwinelle will often take up these practical topics.

DWARF PEAR TREES—Their culture and management. By M. B. Bateham, Secretary of Ohio State Horticultural Society.

This short pamphlet is interesting as showing what is done elsewhere with dwarfs. On this coast we dwarf but few pears, almost all varieties bearing early and abundantly on pear stock. Out of the long list given by Mr. Bateham, we seldom dwarf anything except the Louise Bonne de Jersey, Glout Morceau, and Duchesse d'Angouleme. Dwarfing improves the flavor of most pears, but quince stocks are not well adapted to our dry climate, and our nurserymen grow standards almost entirely.

LECTURE ON ORANGE AND LEMON CULTURE. By Thomas A. Garey.

This lecture, delivered last August before Raisina Grange, Fresno, Cal., discusses the income from an orange orchard, the present and future market, the comparative value of California and Florida fruit, diseases, irrigation, budded vs. seedling trees, and similar topics.

CASE'S BOTANICAL INDEX.

A catalogue is seldom so original as to merit especial notice, but this one is very attractive. The article on *Nymphæa* is of much interest.

DREW'S WINDOW GARDEN. Published by Geo. W. Park, Mount Vernon, Ohio.

Condensed and cheap manuals on literary, educational, scientific, and horticultural topics are every year becoming more plentiful. It is a pleasant task to write a little book which shall reach the hearts of the million, and it is a still more pleasant task to review it. The author, William C. L. Drew, of El

Dorado, is widely known as a practical and interesting young writer. It will be observed that, for the present, our publishers will send a copy of the "Window Garden" to each new subscriber.

THE NATIVE FLOWERS AND FERNS OF THE UNITED STATES. By Thomas Meehan. L. Prang & Co., Boston. Published in twenty-four fortnightly parts, at fifty cents each part. Sold only by subscription.

H. Keller & Co., the agents of this artistic work, have sent us the first five parts, which we shall review in the February number. Each part consists of four elegant chromo-lithographs, in Prang's best style, and sixteen pages of descriptive letter-press for which the name of Thomas Meehan is sufficient guarantee. We understand that the work is having wide sale as a holiday gift-book, for which it is very suitable.

We have also received "Picturesque Arizona," through the courtesies of Mr. A. T. Dewey, of the *Rural Press*, and Mr. Conklin, the author. This also will be reviewed in the next number.

Mr. Elbert S. Carman understands the art of condensation. The *Rural New Yorker* is the model of a practical farmer's journal.

The *Scientific Farmer* occupies a field of peculiar merit. Dr. Sturtevant's "Wauashakum Farm Notes" are of great interest and the editorial work is of rare quality.

Vick's Illustrated Monthly for December, is a charming number, and we keep it on our desk so as to show the colored plate to our visitors.

We always like to read the seasonable hints in the *Gardener's Monthly*. Of course our climate requires a different order of events, but we enjoy the delightfully easy style of Thos. Meehan's articles. Mr. Robinson's *Garden* and Mr. Meehan's *Gardener's Monthly*, are each, in their way, continually growing better, and always afford a horticultural feast of good things.

The *Rural Press*, *California Farmer*, and weekly *Bulletin* lie on our desk; the first two devoted entirely to agriculture and kindred topics, the last giving a page to farm and garden. To these journals, and to all others which assist in developing horticulture on this coast, we extend the right hand of fellowship. The CALIFORNIA HORTICULTURIST is not, nor ever will be, the rival of our enterprising dailies and weeklies. There is room, and, let us hope, success, for us all.

Our brother monthly, the *Southern California Horticulturist*, prints in the November number, Mr. Kercheval's fine poem read at the opening of the Los Angeles Fair. A poem for an "occasion" is apt to

appear forced, but these musical lines linger in one's memory.

The *Gardener's Monthly* for December gives a beautiful plate of *Andromeda arborea* in its autumn glory. We notice a good article on the *Amaryllidaceæ*, by our valued correspondent W. C. L. Drew. Mr. Lonsdale's remarks on the Chinese primrose have also pleased us. We may notice, in this connection, that the *Garden* of November 23d figured some new forms of the Japan primrose. We do not know why our florists so seldom exhibit the Japan primrose, which is a herbaceous perennial of much beauty and variety.

Catalogues, etc., Received.

[We shall acknowledge the receipt of all Seed or Plant Catalogues, Pamphlets, Reports of Horticultural Societies, Agricultural Reports and similar documents.]

Wilmington Nurseries. Wholesale price-list of trees, shrubs, etc. Leo Weltz, proprietor, Wilmington, Ohio. A good colored plate of the Forest Rose Strawberry is inclosed.

Sutton's Bulb Catalogue for 1878; Sutton & Sons, Reading, England. This beautiful quarto catalogue has our unqualified approval.

Santa Clara Valley Nurseries, San Jose; Bernard S. Fox, proprietor. Price-list, 1878-79. Thomas Meherin, agent, San Francisco.

Pomona Nursery, Cinnaminson, N. J.; William Parry, proprietor. Price-list, 1878-79.

Northern and Southern Nurseries, Wilmington, Del.; Randolph Peters, proprietor. Catalogue.

Pleasant Valley Small Fruit Nursery, Moorestown, N. J. Price-list, 1879.

Shinn's Nurseries, Niles; Shinn & Co., proprietors. Descriptive Catalogue, 1879.

C. M. Silva & Son, Newcastle, Placer Co. Descriptive Circular and Price-list.

Co-operative Nursery, Los Angeles; Thomas A. Garey, President. Catalogue of semi-tropical fruits.

Germantown Nurseries, Philadelphia, Pa.; Thos. Meehan, proprietor. Wholesale Catalogue and Price-list, also lists of tree, shrub and fruit seeds.

McLean Co. Nurseries, Normal, Ill.; W. A. Watson, proprietor. Wholesale Price-list.

Bay Nurseries, Oakland, Cal; James Hutchison, proprietor. Descriptive Catalogue.

Arlington Nurseries, Jacksonville, Fla; Albert I. Bidwell, proprietor. Price-list and Catalogue.

Catalogue of Colored Fruit Plates, etc.; D. M. Dewey, Rochester, N. Y.

Morris Nurseries, West Chester, Pa. Trade-list, Innisfallen Greenhouses, Springfield, Ohio. Catalogue of bulbs, roses, etc.

Dayton Star Nurseries, Dayton, Ohio. Wholesale Price-list.

Mount Hope Nurseries, Rochester; Ellwanger & Barry, proprietors. Wholesale Catalogue, Catalogue of Fruits, and Catalogue of Roses.

Cherry Hill Nurseries, West Chester, Pa.; Hoopes Bros. & Thomas. Catalogue of Greenhouse and Bedding plants, also Trade-list.

Bellevue Nursery Co., Patterson, N. J. Trade-list of Florist's stock, etc.

Chr. Lorenz, Erfurt; Catalogue of flower and vegetable seeds.

Catalogue of Dutch Bulbs; M. C. Alkemade & Son, Haarlem, Holland.

David Landreth & Sons, Philadelphia. Wholesale Trade Price-list of garden seeds.

H. Cannell, Swanley, Kent, England. Select list of florists' flower seeds; also Descriptive Catalogue.

Waukegan Nurseries, Lake Co., Illinois; Robert Douglas & Sons. Wholesale Catalogue of Evergreens, etc.

Hapeville Nurseries, Georgia; Hape & Co. Descriptive Catalogue.

Exotic Gardens and Conservatories; Miller & Co., San Francisco. Descriptive Catalogue.

Rock's Nurseries, San Jose. Descriptive Catalogue, also wholesale Price-list.

Wellington's Catalogue for 1879, of Vegetable, Flower and Tree Bulbs, etc., San Francisco.

Publishers' Notices.

☞ The subscription of many of our readers expired with the December number. We have endeavored to make the CALIFORNIA HORTICULTURIST better with each number, and our plans for the coming year embrace many desirable changes and improvements. Will not all our friends who intend to renew their subscriptions do so at as early a date as practicable? Their favors will be of double value for being prompt.

OUR CONTRIBUTORS.—The forthcoming volume of the HORTICULTURIST will contain articles from some of the leading nurserymen, florists, and horticultural writers on the Coast. Our January number speaks for itself, and further announcements will be made hereafter.

We hope that each and every one of our subscribers and readers will try to make up a club for the CALIFORNIA HORTICULTURIST. Every dollar we get helps to make our monthly better. We depend very largely upon those who are acquainted with the aims and character of the HORTICULTURIST to increase our circulation.

We call the attention of nurserymen, seedsmen, dealers in horticultural books, publishers of horticultural journals, etc., to our increasing circulation on this Coast, as a family and home journal of high repute.

The CALIFORNIA HORTICULTURIST enters upon its ninth volume with renewed hope and an increasing subscription list. Copies of the present number will circulate in Mexico and the South American States, Japan, China, Australia, our Atlantic States and Europe.

Feeling that we can return value received, we call the attention of nurserymen, florists, seedsmen, collectors of our native plants and bulbs, dealers in garden requisites, in agricultural implements, and in pottery, to our advertising advantages. Cards of landscape gardeners, of gardeners wishing a position, and of persons in search of a gardener, will be inserted at low rates. All advertisements in any way connected with horticulture, are respectfully solicited. Business notices inserted only in the Business Department.

No wide-awake nurseryman can afford to do without the CALIFORNIA HORTICULTURIST this year. It will contain the freshest original articles, the most practical notes, the cream of the foreign horticultural journals. It will be fearless, impartial, progressive.

NURSERYMEN AND THEIR JOURNAL.—Although our most progressive nurserymen take a horticultural journal, still the number is much less than it should be. Every nurseryman ought to take and read at least one good horticultural journal instead of picking up information at second-hand. And every nurseryman should support his journal by good words, by occasional notes, by showing that he appreciates the work it is doing. A progressive journal is, without exception, a necessity to a man who does not mean to be left behind in the race.

OUR AGENTS.—The Oakland friends of the HORTICULTURIST will always find it for sale at the bookstore of our genial agent, Mr. W. B. Hardy, who is authorized to receive subscriptions. At San Jose the HORTICULTURIST will be kept by Mr. Guppy, First Street. Mr. W. A. Pryal is agent for Temescal and its vicinity. Mr. B. F. Roberts, of Shasta Co., is duly authorized to act for us in the counties of Shasta, Tehama, and Trinity, and our valued correspondent Wm. C. L. Drew, of El Dorado, will at any time forward subscriptions from that vicinity.

We would like to have a full and correct list of the nurserymen, florists, and gardeners of this coast; also, a list of the landscape gardeners; also, a list of the wealthy amateurs, and, indeed, of all who have greenhouses, either large or small. Our friends will do us a great favor by sending us the names of all such persons. Please write, if only on a postal card the names of those persons, in your vicinity, who love gardens, choice plants, and a beautiful home, and let us have the list.



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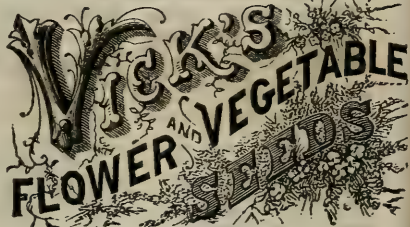
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We would respectfully announce to the Press, and the reading public generally, that the well known HORTICULTURIST will hereafter be

EDITED BY MR. CHAS. H. SHINN, OF NILES.

Mr. Shinn is a young man of much literary promise, who has contributed horticultural articles to the *Evening Bulletin*, *Rural Press*, our own journal, the *Southern California Horticulturist*, the *Gardener's Monthly*, *Vick's Monthly*, the *Rural New Yorker*, and *The Garden* of London. His work has all been of a fresh and yet practical type, and has been widely read and copied.

Under Mr. Shinn's management the EDITORIAL DEPARTMENT will be greatly enlarged; more original matter of especial interest to Californians will be given; Native Plants, Climatic Relations, Arboriculture, and similar topics, will receive more attention; and all Selected Matter will be rigidly condensed. The treatment of Small Gardens, Flowering Plants, Ferneries, etc., on our coast, will not be neglected.

We desire to increase our list of *Horticultural Exchanges*, and shall institute a BOOK REVIEW DEPARTMENT with the January number.

We have secured several new and practical contributors, whose names will shortly be announced. Our plans and changes will further appear in the January Number, which will be published on the first of the month.

Mr. E. J. Hooper,

who has devoted so much of his time to our interests, will not entirely leave us, but remains in the BUSINESS DEPARTMENT, and will occasionally contribute.

From this date all Manuscripts, Editorial Correspondence, Exchanges, Books for Review, etc., must be addressed to

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LIST OF NURSERYMEN, FLORISTS, SEEDSMEN.

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BARBEE, JOHN (Laurel Hill), north side Bush, between Lyon and Baker Streets.
BROCC, ALFRED V. (Bay View), southeast corner Twentieth Avenue and J Street.
COLLIE & STEWART, 18 Post Street.
DOYLE, LUKE, southeast corner Pine Street and Central Avenue.
GAUBERT, JOSEPH (South San Francisco Nursery), 606 California Street.
HARPER, JOHN, east side Folsom, between Nineteenth and Twentieth Streets.
IOCHNER, MAX, northeast corner Turk Street and Van Ness Avenue.
LEONARD, JAMES H., southwest corner Valencia and Quinn Streets.
LUDEMANN, FREDERICK (Pacific Nursery), Baker, between Lombard and Chestnut Streets.
MEHERIN, THOMAS, 516 Battery Street.
MEYER, E. (Eureka Nursery), 27 Geary Street.
F. A. MILLER & CO. (Exotic Gardens), south side of Mission, between Erie and Thirteenth Streets.
NEELY, DAVID, northeast corner Folsom and Twentieth Streets.
PATTERSON, WILLIAM (Golden Acre Nursery), San Bruno Road, near Twenty-ninth Street.
POUYALLET, CHARLES (California Nursery), corner of Harrison and Twentieth Streets.
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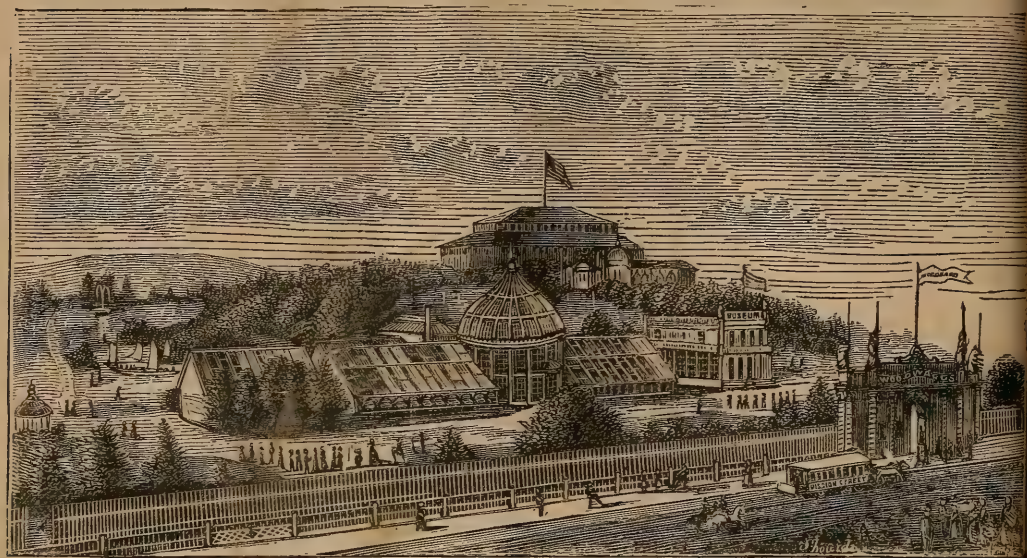
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THE

California Horticulturist

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FLORAL MAGAZINE.

VOL. IX.

SAN FRANCISCO, FEBRUARY, 1879.

No. 2.

Contributed Articles.

SOME OF THE CONIFERS AT THE PARIS EXPOSITION.

By W. B. WEST, Stockton, Cal.

Among the many interesting things which were gathered together at the Exhibition at Paris was the exhibit of Horticulture. It was doubly interesting to me when I saw attached to the collections so many names famous in horticulture and arboriculture. The limits of this article will not allow me to go much into detail, but I will mention some things that can be grown here, and as some of them are seedlings of our native trees, they ought to interest us. The nurserymen of France are skillful, patient men, who in the pruning and management of the trees far surpass all others. Their trees are models of beauty, and their skill in producing new varieties of fruits, evergreen trees, and flowers excites our admiration.

Among the Conifers, California was well represented by specimens of our trees that are seldom equaled at home. There was the *Cupressus Lawsoniana*, the *Sequoia gigantea*, the *Douglass Spruce*, the *Abies amabilis*, and *A. grandis*—all beautiful trees. I felt

proud of them. The moist cool summer temperature of the greater part of France tends to develop all kinds of evergreen trees.

The result of the constant hybridizing is many seedlings that differ much from their parents, and are often very beautiful. The *Lawsoniana* seems to be a favorite, and there are many pretty varieties of it; among them is the *C. Lawsoniana alba* and *argentea*, both well marked and tipped with silver, also quite vigorous and healthy. The *C. Lawsoniana lutescens* is a healthy golden kind, very pretty; there were also many others differing from the parent, and all very beautiful. There are two from the *C. macrocarpa*—the *ciprida* and a little dwarf kind called the *eciniformis*, hardly as large as the golden *arbovitæ*. The *Sequoia gigantea* also was represented by the *S. pendula*, a very distinct weeping kind; and one nicely variegated, the name of which I have lost, but it was worth having, being very artistically marked. The *Thuya semper aurescens* is very compact and constant in color; it is not new there, but has only been introduced into this State about one year. It is the most beautiful golden *arbovitæ* that I know of. The *Thuya elegantissima* is more pyramidal, and it is

a beautiful variety. *Thuja argentea* is new; the branchlets are tipped with white. *Thuja lutea* is not *tipped* with gold as the others, but the branches are of green and gold mixed. It presents a fine appearance and is quite constant in its colors.

The Junipers also gave me much pleasure. They are not so much at home in the hot climate of the interior, but in the bay counties they are fine. The *Cupressifolia variegata* is one of the best. *Shotti* is very fine, much like a cypress. *Gossaintheana*, *Drupacca*, and *Pendula verdis*, are all beautiful kinds. These fine trees are just what is wanted in the cities. They do not take up much room, even when fully grown, and there is such a variety of foliage among them that they will not become monotonous.

The *Cedrus Deodara* is a magnificent tree. We ought to cultivate it more than we do, for it thrives well even in the hotter portions of our State. The specimens upon the Exposition grounds were very perfect and beautiful. Loudon says of it: "The feathery lightness of its spreading branches, and the beautiful glaucous hue of its leaves, render it, even when young, one of the most ornamental of coniferous trees; and all travelers who have seen it full-grown, agree that it unites an extraordinary degree of majesty and grandure with its beauty." It possesses all the qualities of a beautiful weeping tree, and it seems that nature has concentrated in it all the beauties of the conifers. The Cedar of Lebanon, also, was represented. This is not so striking a tree as the *Deodara*, but when old is one of the most picturesque of trees. There are several varieties of these kinds. I have a *Deodara* about fifteen years old, which is quite as beautiful as any I saw in Europe. My trees

are very thrifty and handsome, showing that they are well adapted to our climate.

There was an endless variety of variegated foliage trees and shrubs, many of them only fit for a cool, moist climate. The variegated ash-leaved Maple (*Acer negundo variegata*), the purple-leaved Beech, and the variegated Elm (*Ulmus variegata*), are striking and elegant kinds. They form large trees, and are of great value in ornamental planting.

The Magnolias were also well represented—the double varieties of the *grandiflora* being fine; also the Lord Exmouth. The specimen trees exhibited were twelve to fifteen feet high, and very perfect.

Among the shrubs were some new *Wigelias*; a large collection of roses from Jules Margotten and others, and beautiful new *Euonymus*, silver leaved, and very vigorous.

Eucharis Amazonica, *Laelia Autumnalis*,
and *Cypripedium Insigne*, for
Winter Blooming.

By C. F. HUETTEL, San Jose, California.

The three beautiful flowers which I mention are easy to cultivate, and yet are very seldom seen in California. With a few plants of each we may have some flowers in our greenhouse through the whole of the autumn and winter, and often, as is the case with *Eucharis Amazonica*, we may gather flowers almost the year round.

Some persons claim that they can not flower the *Eucharis* at all, and their failure is not to be wondered at if they go about it in the way I once saw at a place where single bulbs were planted in eight inch pots, and grown in a cold, airy greenhouse, where they might be for years without a sign of a flower.

The best way to flower these valuable

plants on this coast would be to plant about eight strong, healthy flowering bulbs in a pan of one foot in diameter, and five inches deep, taking care to have several holes in the bottom to let the water escape freely. Put two inches of clean pieces of broken pots in the bottom of each pan, for drainage, taking care to put the biggest pieces below, and to finish off with the smaller ones; then cover the pieces of pot with clean moss to prevent the soil from sinking with the drainage, in which case failure would be sure to follow, as the roots would rot. Now prepare the compost for potting the plants in, which may consist of one part loam, two parts leaf soil, one part of well-decomposed cow manure, and a little peat, if it can be obtained. Should the loam be of a heavy nature it will be benefited by adding a little clean river sand. Mix these ingredients well together; put about one inch of the compost in each pan; place the bulbs on top, and cover them just a little above the crown, taking care not to cover them too deep; press the soil firmly around the bulbs, and give a gentle watering with a fine rose pot—and the operation of potting out the *Eucharis Amazonica* will be finished.

Next, place the pans in a strong bottom heat in a frame which should have been prepared some time before. The material for procuring this heat may be either tan-bark, or fresh horse manure. For my part I prefer the latter, as there is always some fungus to be found in the tan-bark which creeps into the pots, and often does much damage to the plants. Give a little air in very warm weather, from ten o'clock to three P. M. Syringe the leaves lightly, and, if the plants begin to make a strong growth, fill the pans well with tepid water. Always give the leaves plenty of moisture

if the weather is warm, and shade the plants, for our hot sun will burn the leaves. After the heat of the hot-bed decreases, use some fresh manure in the old one, and if everything wends along favorably, the plants may be gradually hardened off, after about ten weeks of such treatment. This will be accomplished by giving more air, and less water for a few days.

Then take the plants and place them in a greenhouse, but not in such a position that they would be standing directly in a cold current of air, which would turn their leaves yellow, and would soon be fatal to them. Be careful to keep the full rays of the sun from them, giving them, in the meanwhile, only just enough water to keep the leaves from flagging. After thus resting the plants for a period of about four weeks they will be ready to force into flower. To accomplish this, place them again in a frame, which should have been prepared some time previously for their reception, and plunge the pans to their rims in the manure, tan-bark, or whatever has been the material employed.

The plants may now receive plenty of water on the leaves and roots. Give a little air when the weather is very warm, shade from the burning rays of the sun, and in about one month the flowers will make their appearance. After that, harden the plants off by degrees, and, in a few days after, the plants may be removed to the greenhouse, or even to the sitting room, without receiving any injury, if the plants have been properly hardened. The flowers are of the purest white, deliciously fragrant, and will last for two weeks in good condition.

After the flowering is over, the plants may be rested for a little while; then they can be returned to the bottom heat and treated as before, if it is desirable

to bloom them again, and beautiful flowers will in due season reward the ardent cultivator.

It must be borne in mind that, to be successful in their culture, the roots must not be too often divided. If that operation is performed great care must be taken to injure the roots as little as is possible, merely taking the off-sets, or smallest bulbs, and, planting them close together, growing them in the compost recommended for the flowering bulbs. Place these young *Eucharis* bulbs in a strong, moist, warm atmosphere, where they may be grown without resting them until they are of such a size and strength as to flower well.

Laelia autumnalis may be grown in a greenhouse where, in the winter, fine heat can be kept up to command a night temperature of from 45° to 80°, and in daytime it may rise higher. When the plants are making their growths in the summer and autumn months they should be placed in a position where they will be close to the glass and will have plenty of light, only keeping the burning sun from them. Should they be far from the glass the bulbs would only be of a poor color, and elongated shape, and would not flower, and in cold, damp winter days they would be extremely liable to rot. *Laelias* should have plenty of water on their roots in the summer, when they are in active growth; the best material for potting them would be peat, with living moss, and the drainage should be in good condition:

Cypripedium insigne will succeed equally well in a greenhouse where a temperature at night can be maintained at from 40° to 45°. In the daytime it may rise considerably higher. In the summer, when the plants are growing vigorously, they may have plenty of water on their roots, and may often be

syringed on the leaves. As the days grow shorter and colder, however, much less water will be needed, but the plants should never be kept too dry, even when at rest, as they have no pseudo bulbs to support them, as the majority of orchids have. They will succeed well in a compost of loam, leaf mold, and rotten manure, with some pieces of broken pot, and the drainage must be kept open, as the roots will not long stay in a good healthy condition with stagnant water and sour soil around them. The flowers of *Cypripedium insigne* will appear fresh and beautiful for a period of two months, if kept dry and cool.

[Mr. Huettel, who has charge of the greenhouses and propagating department at John Rock's Nurseries, San Jose, accompanied this valuable article with a box of the flowers mentioned, which arrived in splendid condition, and were the cynosure of all eyes. They are admirable flowers for the conservatory at any season, but doubly so now, when flowers are not abundant.—Ed. Hort.]

A STATE FOR SALE.

By PROF. H. B. NORTON, State Normal School.

The metropolis of each State is wont to feel and act like Louis XIV, when he declared "I am the State!" All travel must be centred there; all money be expended there; all means of pleasure and culture aggregate there. The State shall exist for the benefit of its great city. The forests shall grow, the wheat ripen, the mines yield their wealth, mainly that a few bankers, merchants, princes, and scientists may enjoy the results.

One redeeming feature of life in England and in the Southern States under the old *regime* was, that it exalted and honored rural life and the country

home. And the worst aspect of the social economy of California is in the fact, that as yet it scarcely recognizes the possibility of settled and permanent life outside of the cities. The ranch or the vineyard is expected to yield its revenues to the magnates of the Stock Exchange, or to the boarders in the Palace Hotel.

Much of the land is tilled by Chinese laborers, or by a tenant population—homeless, hopeless, and too often demoralized. The tenant-life on the wheat-ranch seems destructive to all habits of settled industry. After the harvest is gathered and marketed, months of almost enforced idleness follow. The loving labor of improving, ornamenting, and beautifying a home, which would be performed by the owner of a country homestead, has no place in the plan of a tenant. The boys, too, often grow up idle, drunken, and worthless. These vast estates, often so unjustly acquired, which make a settled population of rural freeholders impossible, are the darkest shadows in the problem of our future.

One inevitable result is the emphasizing of the centripetal tendency. The country residence is a sort of penal colony or purgatory, where men earn the money which will be spent in one of the cities by the bay. Almost the entire State is for sale. Few men buy land with the thought of making there a home for their old age, or for their children. It is bought only that they may soon sell again at a profit. It is scarcely too much to say that nearly every house and farm of California is in the market.

Our young men, born in an era of feverish unrest, and vast, vague expectations, seem often birth-marked with its spirit. A quiet, plodding country life, among bees, flowers, and children, is a

thing intolerable. To make a vast fortune in the stock-market, or on the race-course, or at the law—to buy a province in Mexico, or an island-principality in the Pacific, seems to be the universal dream. We have almost no yeomanry. The strong life of this State centres in its cities. The power of Illinois or Iowa is in the hands of its small farmers. Here, between an alien, communistic mob, and a few millionaires, we have no great body of men owning the soil, and correspondingly interested in the order and prosperity of the State. Thus the city rules, almost without balance or counterpoise.

The intellectual life of cities is intense, but their moral and physical life is often feeble and tainted. Boys grow up in vice and idleness, and girls in thoughtless extravagance. No doubt there are many noble exceptions; no doubt the grandest moral heroism and mental power, and the most refined and stately physical development, are to be found in the cities; but reeking and stagnant sewers, crowded tenements, the temptations to extravagance, and the opportunities for vice and idleness, do their evil work upon the masses.

And all this is true of a State which only needs patient labor and persevering love, to make it a very Garden of the Hesperides. There is a potential paradise in every valley, and upon every mountain side. What our State needs is homes! And the great effort of every teacher, christian minister, and lover of this wonderful State, should tend to the exaltation of rural life, and the honoring of productive labor. We want to see muscle inspired by brain, and heart working with hand. Culture is well-nigh worthless if it does not ultimate in pure and tasteful homes, and in children born righteously, and growing up in health, industry, and virtue.

A recent visit to Fresno seemed to give me a glimpse of a new California, better than the Argonauts dreamed of. The King River flows out of the grandest mountain-mass of the continent, into a plain which seems arid and worthless, but which has really enormous natural wealth, for it is a rich sandy loam, almost as fertile at the depth of fifteen feet as at the surface. I found vineyards bearing a wonderful quality of grapes, very sweet on account of the intense summer heat, and orchards of other fruits of equal quality. Alfalfa, on the irrigated land, is mowed four or five times a year, and four cows are fed from one acre. Twenty acres are said to support a family. There irrigated colonies are fields for the working of the law of Natural Selection; the social faculty is cultivated, and the power of organized action developed, and selfish and quarrelsome men are crowded out. I here caught a glimpse of a great future. California has room for half a million such homesteads, abodes for comfort, culture, and happy industry. It will yet be true of the States of this coast, that "time's noblest offspring is the last." Half a million rural homes, owned, adorned, loved by their tenants, will arrest the destructive centripetal tendency, make possible the suppression of vice and drunkenness, and change California into an Eden indeed.

FROST IN OAKLAND.

By JAMES HUTCHISON, Oakland, Cal.

Last December was the coldest month that I have known in California during twenty-six years. I have several times seen the thermometer stand at twenty-two degrees, but on the mornings of December 14th, and 29th, the thermometer stood at twenty degrees Fahr. We had two weeks of continuous frost, and the result of this long, severe cold

was that cut flowers were extremely scarce during the holidays. I have heard of one rose-bud having been sold for fifty cents on Christmas day.

I had frost in all my greenhouses that were not provided with fire heat. The effect on outdoor plants has been quite disastrous. We are not surprised any winter to see such plants as Heliotropes, Salvias, Lantanas, Hibiscus, Ageratums, Geraniums, Cupheas, and Achanias badly nipped by frost. This winter we have to add the following list as having suffered. Many of them, however, will no doubt recover: Oranges, Diosmas, Veronicas, Agapanthus, Abutilons, Escalonias, Brugmansias, Myoporum, Grevilias, Hardenbergias, Clanthus, Ericas, Habrothamnus, Tecomas, Fuchsias, Mahernias, Diringias, Cestums, Eupatoriums, Hydrangeas, Cytisus, Polygallas, Neriums, Peppers, some varieties of Acacias, Eucalyptus, and other plants and trees.

Florists generally are mourning over their loss, but I think there are benefits that ought to be considered. An overstocked plant market has been thinned out, and those who are not proficient in the business from their lack of practical knowledge and want of conveniences, are the heaviest losers. The long continued frost had the effect of checking the growth and ripening the wood of many plants which in a mild winter keep growing, so that they do not shed their leaves. The roses, snow-balls, syringas, spireas, and similar plants belong to this class. Such, this winter, (where they have not been watered late in the fall), are now nearly leafless, and if judiciously pruned will be entirely so. All leaf insects, therefore, such as red spider, thrip, and green fly, can be got rid of entirely, and we shall, next season, have much less trouble than usual.

WHAT I DID WITH MY CONES.

By L. H. T.

Among the trophies of a summer journeying, were some large and very perfect pine cones ; a trifle larger than an ordinary pineapple. The belongings in my trunk objected rather strenuously at first to such unimpressible companions. They did not mind the moss, of which some fallen trees had given me a goodly quantity ; and the lichen-covered twigs of a reasonable size could be endured ; but these same cones were so stiff and ungracious ! However, after much coaxing, all resigned themselves to the discomforts of a crowded conveyance, and my cones were transported in safety to their city dwelling-place.

Arrived at home, and my treasures unpacked, the family question was this : " What are you going to do with those cones ? " " I have a thought, " I sang in reply, and left them vainly to conjecture what it was, turning a deaf ear to all remarks on robberies of forests ; and the gains a Custom House could make, if only there was a duty on the importation of all such trash.

The next day, my " thought " made its first declaration. Finding some copper wire, and taking two of my cones (one rather smaller than the other), I fastened a girdle of the wire securely around each. Then, making wire handles fast to these girdles, I thus made the cones ready to suspend, the larger one some two or three inches underneath the smaller, and both arranged to hang by a long wire from the roof of my conservatory. Then, with a careful hand, I filled all the interstices of the cones with a rich soil, planted canary and some other fine grass seed, and hung them in their place. Now came the watering, which had to be done, as my

good gardener expressed it, " very genteel-ly ; " for, of course, the least roughness would wash away the earth.

It was not very long before the seeds remembered how beautiful it is to live, and tiny sprouts of green showed everywhere. I allowed my crop of grass to grow some two inches. Then, with scissors for a scythe, I mowed it close. That operation I repeated several times, till the soil seemed quite tied together by the roots of grass.

Now was the time for fern-sowing, for, although my cones were pretty, clad with their grassy robe, I had in store for them a far daintier dress. In various places in the conservatory grows a very graceful fern (*Cheilanthes Californica*), which has a peculiarly happy faculty of adapting itself to circumstances ; growing to be four feet high if permitted to occupy a corner of the garden, but keeping its height within as many inches if given only an abalone shell for a home. The first fern of this kind that I possessed, I gathered underneath the Yosemite Falls.

The larger specimens of this fern are always rich in spores. Underneath some of the tallest I hung my cones, that the spores when old enough to leave their birth-place might find a new home with them. And here I must acknowledge to hurrying things a little by frequent gentle shakes of the fern from which I expected so much.

After long and patient waiting, between the grass stalks, on the cones, there came a darkish green appearance, which after awhile seemed to have reached the dignity of moss, but which was really the prothalli, or early stage of growth, of my ferns. From this point progress was more rapid, and presently my " thought " clothed itself in a living and beautiful form ; for my cones became a mass of the most delicate ferns,

which took entire possession, so that only here and there a little spear of grass could hold its own. Moss was allowed a little room, and formed an exquisite carpet upon which the ferns could bow and courtesy their thanks to the numerous admiring eyes that gazed upon them.

Wasn't it worth while bringing those cones all the way from Lake Tahoe?

THE DOUBLE FLOWERED DEUTZIA.

By W. C. L. DREW, El Dorado, Cal.

The genus *Deutzia* embraces several valuable species and varieties of hardy flowering shrubs, mostly natives of China and Japan.

Some of the older species, like *gracilis crenata*, and *scabra*, are well known. The beautiful double sort which has been recently introduced is, however, far more beautiful, but not so generally cultivated as its merits would justify. Mr. Fortune, to whom we are indebted for so many valuable plants, discovered this variety in Japan, and sent it to Europe, where it was first offered to the trade in 1863, under the botanical name of *Deutzia crenata* var. *flore pleno*—or the double flowered *Deutzia crenata*. Recognized at once as a great acquisition, propagators did their utmost to multiply and disseminate the stock. Since then it has continued to grow in popular estimation, and large numbers have been sold. But in California, like many other beautiful plants, it is not so well known, or so widely distributed as it should be. Hardy as an oak, vigorous and robust in habit of growth, handsome in foliage, a beautiful and profuse bloomer—all the requirements of a beautiful shrub may be summed up in its favor.

The blossoms are perfectly double, of the purest snow white color, the reverse side of the petals being tinged with

pink. They are produced in panicles of racemes from three to four inches long. No shrubby border can be considered complete without one or more specimens of this valuable *Deutzia*, and we trust our brief remarks may prompt many to avail themselves of the first opportunity to secure a plant.

Within the last few years several other double flowered species have been introduced, but we can not speak of them from personal observation. *Deutzia crenata* var. *flore albo pleno*, is described as of similar growth and habit to the former. The flowers are, however, of a pearly white on the reverse of petals, being in fact one of the purest white flowers known. If as described, it must be a grand acquisition. A quite new and distinct variety under the name of *Deutzia scabra* var. *flore albo pleno* is offered by several Eastern firms. It is represented to be pure white in color of bloom and with excellent habit and foliage, the latter resembling *D. scabra*. We hope to soon see these new varieties in general cultivation in the gardens of California.

TWO CALIFORNIA SHRUBS.

By J. B. HICKMAN, San Juan, San Benito Co., Cal.

There are probably none of our native shrubs more worthy of cultivation than *Rhododendron Occidentalis*, and *Pickeringia Montana*. Both have such a wide range of habitude and altitude that with a little care in the selection of well drained soils they would probably do well under any ordinary circumstances.

According to our "Geological Survey," the former is found by streams throughout the State, but I have never found it except on the tops of ridges, generally in company with the *Pickeringia*; the latter, however, seeming to have a much greater range, extending to the low ridges bordering the valleys.

The *Rhododendron*, or as it may be more properly called, *Azalea*, presents a magnificent sight when in bloom, each stem appearing an immense wand of dazzling white, thrown into beautiful relief by the dark green of the plant's leaves. On a near inspection many of the blossoms show a fine dash of yellow, and I am inclined to think age gives to many of the blossoms a bright rosy tinge. The flowers are of a much firmer texture than our greenhouse *Azaleas*, and a sweet odor is not the least of their attractions; the plant is deciduous.

In my several attempts to transplant it to my garden I have been unable to give the plant what I consider a fair trial; several grew nicely in boxes and formed an abundance of fine roots, which were unfortunately drowned by over watering; a few bloomed in my garden but they fell victims to the disturbing influence of the gopher. Any piece of its knotty crown will send up new sprouts, so the plant can be had in any shape.

Pickeringia Montana seems to be partial to foggy situations, for in such it produces leaves enough to hide its nakedness, as well as brilliant show of its spikes of crimson bloom and a few seeds, while on fogless ridges it bears but few leaves and blossoms, forms no seeds, and its grey thorny branches present an almost impenetrable barrier to all but the smallest animals. This property would suggest its use as a hedge-plant, as it would grow in the driest places, and where there was moisture enough it would present a magnificent spectacle. It is an evergreen and I believe will propagate readily from its underground stem or root.

SWEET ALYSSUM makes a neat edging for a large pot occupied by an oleander, daphne, etc., in window gardening.

EFFECT OF FROST IN SACRAMENTO CO.

By GEORGE RICH, Sacramento, Cal.

Our late frosts have made sad havoc among our gardens and grafted semi-tropical fruits. Seedling trees seem to have escaped with much less injury, owing to their hardier growth; but the ends of new wood are killed on almost all semi-tropical trees, and many seared and dry leaves lie withering on the ground beneath the trees. The main stems and old wood, however, have stood the freezing point wonderfully. I have one budded orange that has stood many winters, and it now looks as well as the seedlings.

The broad leaves of the palm are dead, and the tender growth of the myrtle hedges are curled as if by a flash of fire. The beds of everlastings show their perfect form still; but many plants and bulbs that have kept green until lately, have fallen beneath the frost, leaving the garden barren indeed.

We had a few good showers, but we have not been blessed with one real rain-storm this season. There has been a cold north wind almost every day, and a heavy white frost every night. Still the farmers are keeping as busy as possible. Where the soil has had sufficient moisture it is being prepared for small fruits and grain; the orchard and vineyard are being pruned; the thick growths of shrubs and vines must be removed; and the signs of the frost's work will soon be cleared away.

LIST OF WILD FLOWERS

In Bloom at Santa Cruz, Cal., Jan. 1st, 1879.

Ranunculus Californicus... "California Buttercup."
Clematis ligusticifolia..... "Virgin's Bower."
Eschscholtzia Californica..... "California Poppy."
Nasturtium officinale..... "Water Cress."
Erodium cicutarium..... "Alfalaria."
Oxalis Oregona..... "Oregon Wood Sorrel."
Oxalis corniculata..... "Yellow Wood Sorrel."
Ceanothus papillosus..... "California Lilac."

Lupinus arboreus....."Tree Lupine," (scarce)
 Hosackia glabra.....
 Vicia Americana....."Pea Vine."
 Rosa Californica....."Wild Rose."
 Adenostoma fasciculatum....."Chimisal."
 Rubus leucodermis....."Wild Blackberry."
 Enothera Hookeri....."Evening Primrose."
 Enothera ovata....."Evening Primrose."
 Aster, one or two species.....
 Solidago Californica....."Goldenrod."
 Chrysopsis, species not determined.. "Golden Aster."
 Hemizonia corymbosa.....
 Baccharis pilularis....."Groundsel Tree."
 Bigelovii arborescens....."Tree Goldenrod."
 Grindelia robusta.....
 Corethrogyne flaginifolia, an Aster-like plant.....
 Troximom taraxicifolium... "Dandelion Troximom."
 Arctostaphylos tomentosa....."Manzanita."
 Arctostaphylos Andersonii....."Manzanita."
 Rhododendron occidentale....."Azalea."
 Solanum umbelliferum....."Violet Nightshade."
 Solanum nigrum....."Black Nightshade."
 Mimulus glutinosus....."Monkey Flower."
 Castilleja latifolia....."Painted Cup."
 Oreodaphne Californica.... "Laurel."
 Iris longipetala....."Flower de Luce."
 Ceanothus thyrsiflorus....."California Lilac."

Only such as might be considered ornamental are included in this list. The unusually cold, frosty, and dry December has shortened the list considerably. Many of these flowers came lingering down through the autumn days, lured on by the mild summer-like breezes of our sheltered coast, as if to greet the Christmas times. Others are the pioneers and harbingers of spring; while still others are to be found blooming every month in the year, such as the Azalea, Mimulus, Solanum, the Dandelion, and the Goldenrods.

C. L. ANDERSON, M. D.

List of Wild Flowers in Bloom at Niles, Cal., Jan. 4, 1879:

Nasturtium officinale....."Water Cress."
 Ranunculus Californicus... "California Buttercup."
 Lupinus densiflorus....."Compact Lupine."
 Fragaria vesca....."Wild Strawberry."
 Eschscholtzia Californica....."California Poppy."
 Mimulus cardinalis....."Monkey Flower."
 Mimulus luteus....."Monkey Flower."
 Castilleja sp....."Painted Cup."
 Asclepiadaceæ fascicularis and sp.. "Milk-Weed."
 Penstemon Menziesii.....
 Anagallis arvensis....."Common Pimpernel."

Solanum Nigrum....."Dark Nightshade."
 Saxifraga, Sp.....
 Chrysopsis Bolanderii, probably.....
 Micromeria Douglassii....."Yerba Buena."
 Grindelia Robusta.....
 Nemophila insignis....."Love Groye."
 Viola pedunculata....."Yellow Violet."

Some of the early bulbs begin to show their leaves, but the unusual cold has delayed the appearance of many flowers.

C. H. SHINN.

List of Flowers Blooming at El Dorado, El Dorado Co., Cal., Jan. 1, 1879.—Violet, Marie Louisa. Violet, Reine Victoria. Pansy, Odier. Verbenas. A few roses. No wild flowers except Viola Californica. Frosts unusually hard.

WM. C. L. DREW.

CLAPP'S FAVORITE PEAR.

By E. J. HOOPER, San Francisco, Cal.

The *Pacific Rural Press*, which has kindly loaned us the engraving for our frontispiece, states that "This variety is one of the new American pears and has been tested by the originators, the Messrs. Clapp, for several years, and we bring it forward as worthy of the attention of pear cultivators. It is recommended to fruit growers, and is being introduced by those good judges of fruits, Ellwanger and Barry, of Rochester, N. Y. It was originated by Messrs. F. & L. Clapp, of Massachusetts, who have brought out several other good seedling pears. This one is named "Frederick Clapp," or Clapp's No. 22, and is probably a cross between Beurre Superfin and Urbaniste, and the tree in its habit resembles the latter variety, being a moderately vigorous grower, and a good producer. Concerning the fruit of the Frederick Clapp, the committee of the Massachusetts Horticultural Society, judging at a late fair, said: "It was pronounced decidedly superior to the Beurre Superfin, and is

regarded by all who have seen it as the highest bred and most refined of all the seedlings shown by Messrs. Clapp."

Barry, and all other authorities of recent date that we know of, however, say on the other hand, that this pear is "a probable cross between Flemish Beauty and Bartlett, the tree resembling the former, and the fruit resembling the latter." We can not suppose that the Urbaniste and Beurre Superfin can have been the parents, and the statement of the *Rural Press* is therefore new to us. Clapp's Favorite ripens, according to Barry, in northern New York ten or twelve days before the Bartlett, which last matures early in September.

The ripening season of fruits in California varies so much in different localities that we can not well fix any particular season for them. We can only state that Clapp's Favorite Pear is a large fruit, ripens ten or twelve days before the Bartlett; with us it is more than "above medium," as described below by the Hon. M. P. Wilder, and is "large" with us. Col. Wilder, President of the American Pomological Society, and who has made the cultivation of pears a specialty for a great number of years, has several times expressed a high opinion of this variety, gives the following description of the fruit shown in our colored engraving: "Form generally obovate, but somewhat variable; size, above medium, skin thin, smooth and fair, clear and lemon yellow; flesh, fine grained, very juicy and melting; flavor, sprightly acidulous, rich and aromatic."

The Egyptian papyrus plant affords a most lovely object for front yard decoration. We have seen it, and if others appreciated its beauties as we do, for this purpose, the demand on florists for young plants would be large.

Natural History.

THE ROAD RUNNER.

(*Geococcyx Californianus*.)

By B. F. ROBERTS, Anderson, Shasta Co., Cal.

This curious bird, of rather limited habitat, merits a short description. It is most frequently found in Southern California, Northern Mexico, Nevada, Utah, Arizona, and on the plains of Colorado, New Mexico, and Texas. It is, in this State, found as far north as the debouchure of the Sacramento near the base of Mount Shasta. We can not learn that it has been seen either in Trinity, to the west, or in Siskiyou, to the north.

The Road Runner presents a rather ludicrous appearance, with its long body, stilted legs, and large tail. A mature specimen measures eighteen inches from the tip of the tail to the point of the bill, which itself occupies about a fifth of the entire length. Its toes, being disposed longitudinally in pairs, assign this bird to the order Scansores, though it never ascends a tree unless closely pursued. Its value in the economy of nature consists in the destruction of insects, and slugs, which, with the eggs of sparrows, and other earth-nesting birds, constitute its food.

Its favorite haunts are sandy plains in the vicinity of foot-hills having a fringe of underbrush to which it swiftly retreats, by running, on the approach of an enemy. When at a distance from shelter they are sometimes captured by the aid of swift horses and dogs, a close race of a mile being generally sufficient to overtake the birds. In ascending a tree I have never known them to use the trunk, but always by a short flight reaching the lower branches, and thence going to the top by the outer twigs.

From other enemies their natural timidity is usually a sufficient protection, though in some instances they appear rather to court danger when attacked. From a friend I had the following interesting account of an attack of a hawk upon one of these birds, which he witnessed :

"I noticed the Road Runner feeding near a clump of bushes, yet apparently watching closely the movements of his foe. When the hawk darted down to seize his prey, the intended victim described a circle of not more than six feet in diameter, thus bringing itself in the rear of its assailant."

The gentleman stated that during the space of fifteen minutes, the hawk made eight or ten strokes which were rendered futile by the above maneuver.

These birds are usually found in pairs, which indicates that they are hatched in like manner. Their nests are made upon the ground, but are so carefully secreted as to make the finding of one a rare occurrence, even with the mountaineers, or with bird-nesting, barefoot boys. Indeed a person who is not used to the appearance of the Road Runner is quite apt to fail to perceive it when pointed out. Its motions are at times so swift and unexpected that it is one of the most surprising of birds.

A NOTE FROM MR. RIVERS OF THE UNIVERSITY.—Mr. J. J. Rivers, Curator of the University Museum, Berkeley, writes that :

"The Road Runner is of the nature of a ground Cuckoo, and its distribution appears to be confined to Western North America, but to the warmer parts thereof. The most available works giving an account of the species are Swainson's Birds, II. 1837, and Ornithology, Geological Survey California, Vol. I, page 368. Hutching's Magazine, Nov. 1856,

contains a paper on this bird by Mr. A. J. Grayson, then of San Jose. Its position and belongings are as follows: Order, Scansores ; Family, Cuculide ; Genus, *Geococcyx* ; Species, *Californianus*."

Correspondence.

[The editor of the CALIFORNIA HORTICULTURIST cordially invites all persons interested in any branch of horticulture to send practical questions and notes of their own successes and failures. A brief, unadorned statement of events in one little garden may often prove of universal interest. Short notes from busy people, all over the Coast, will make this Department fresh and valuable.]

WINTER ROSES AGAIN.

EDITOR HORTICULTURIST — Sir : Mr. W. A. Pryal speaks of flowering roses in the open air, and in winter, over the central and southern part of California. I am unable to find a single rose in the open air, not even the White Daily, which I never saw open here before the first of March.

Isabella Sprunt is rather a medium grower, and can not be called vigorous, but, as far as color and shape are concerned, it is certainly good. Bon Silene has been a tea rose since it first came into cultivation. (Outside of California, the tea roses are not termed hardy.) I am unacquainted with any rose by the name of Pauline. There seems to be hardly enough difference between Solfaterre and Lamarque to include both in a collection of only twelve. Why not mention Marechal Niel for covering pillars, instead of Solfaterre, or else such a rose as Chromatella or the Glorie de Dijon ?

As regards the pruning of standard roses (which means roses budded at a height of several feet), there can be no rule laid down, as the operator must be his own best judge. At any rate, twelve inches would be too long for even the most vigorous limbs, as a few years of such pruning would certainly make

them look naked and ungainly. The main point is to prune in such a shape as to remain as close as possible to the main stem year after year, which is the only way to produce fine and well-formed flowers.

C. F. HUETTEL, San Jose.

[An honest expression of differing views, if given with due regard to other persons' feelings, and with only the finding of truth as an object, is always desirable. This Correspondence Department is open to all discussions, or criticisms, which promise to be of general interest. The subject of Winter-blooming Roses may be made a fruitful one. But it must be remembered that this is an exceptionally severe winter. We happen to know that Mr. Pryal's location is unusually well sheltered, and we saw an abundance of roses there in early December. The rose alluded to as Pauline is probably Pauline Levasseur. At present, winter roses are certainly few and far between. We found a Gloire de Rosamond the other day, (Jan. 15th,) also a Lamarque, and a Cloth of Gold, but they were not very perfect specimens.—ED. HORT.]

SCALE BUG AND THRIP.

EDITOR CALIFORNIA HORTICULTURIST—

Sir: I have a good-sized greenhouse, which I chiefly devote to ferns. I have everything I can procure here, and I have also imported many varieties from New Zealand. I wish to ask:

1. How can I get rid of the scale insect? I have washed plants with whale-oil soap, but back the scale comes. I have two kinds of scale, the ordinary kind, and another which only infests thick-fronded ferns. This last is darker and rounder than the other.

2. Some of my ferns are infested with the "thrip;" what can I do with them?

3. What shall I do to get rid of that

black fungus which grows on the leaves of the Orange, the Camellia, the Stephanotis, and similar plants?

When you have time will you not tell amateurs how to cultivate the Camellia plant? I have tried for years, but I can not get one to flower properly.

Respectfully yours,

THOS. BENNETT.

[1. The scale insect upon ferns is not a common experience. We should be glad to have a few of the infested fronds mailed to us for examination. We have found that, in the open ground, on oranges and acacias, it is best to add a little free potash to the whale-oil soap. Repeated applications of this have never failed, and ought to be of service in the greenhouse. Professor Hilgard recommends adding a little of the oil of pennyroyal to the whale-oil soap in bad cases. The use of coal-oil is spoken of elsewhere in this number. The scale bug must be attacked while yet small and soft. Every part of the plant must be washed. A solution with more potash, or pennyroyal, in it can be used for the older scales—a little experimenting will determine how strong the solution should be. In two weeks examine the plants again. A valuable article on the species of coccus (scale bug) and remedies, has been promised us for this volume, to which we shall refer our correspondent. Be sure your greenhouse is well ventilated, and is not kept too dark.

2. The thrip is an enterprising little insect which does a surprising amount of mischief. It varies greatly in size, being often hardly perceptible by the naked eye, but sometimes it is nearly as large as the green fly or aphid. The use of tobacco smoke to fumigate the plants, or of a decoction of tobacco leaves as a wash is the main dependence. This insect luxuriates in a dry atmos-

phere, and where plants stand too closely together, or when ventilation or light are deficient. Peter Henderson says, that for over twenty years his green-houses have been fumigated with tobacco smoke once a week, for the benefit of the thrip and aphid. In this fumigating process the doors are closed and damp tobacco placed on a few coals in a pan. Heliotropes, Lantanas, and a few similar plants do not well endure smoking, and should be washed with a solution of tobacco made about the color of weak tea. It is best to make a quantity quite strong, and then to reduce its strength by adding water, if necessary, testing it first on a few leaves. Mr. Hutchison says, syringe on the under side of the leaves.

3. The black fungus on the leaves of some plants is a sign of the presence of scale bug. Wash the leaves and branches clean with warm water, using a sponge and rubbing gently. The Oranges and Stephanotis probably need more sun. Examine the soil, and keep the surface well stirred. We received some orange trees last year which showed black on every leaf, and also with scale bug, but two or three careful washings with whale-oil soap made them healthy, and they soon began to grow rapidly.

The Camellia question will receive early attention.—ED. HORT.]

HORTICULTURAL WORKS.

EDITOR HORTICULTURIST — Sir: Will you kindly inform me where I can procure a book relating to the effects of latitude and altitude on fruit trees, grains, vegetables, and plants of every description? I wish also to read some good authority on pruning trees and bushes; also some work on the cultivation of vegetables and medicinal herbs. Hoping that you will kindly furnish me

a list of books of value on these topics,
I am respectfully yours,

J. J. H., San Quentin.

[As regards the first question, if J. J. H. desires something which will tell him exactly what he can grow with success at any given locality, if only the latitude and altitude are known, we are forced to reply that there is not now, and probably never will be, such a book. The local influences, particularly in this State, will be found to greatly modify any text-book tables, and, in short, this matter can not be reduced to an exact science. But if, as we suppose, J. J. H. desires to study about the general relations of altitude and latitude on vegetation, he has entered upon a most interesting field of research. Guyot's Physical Geography, with perhaps the help of a better isothermal map, such as may be found in Johnson's Atlas, will give the leading points. Humboldt's Cosmos gives a comprehensive view of this subject, and of the great forces and influences of nature. It is a work of dignity and marvelous power, and never will be entirely laid aside. The Patent Office Report (Agricultural) for 1863 contains an article on the Geography of Plants.

The second question relative to authorities on pruning might be answered by referring to expensive French, Belgian, or English works, but we prefer to name well-known American books. Barry's Fruit Garden, price \$2.50, contains all that can be desired, and is also a complete manual of orchard work, and leading varieties of fruit. When J. J. H. has exhausted Barry we will furnish him with as many yards of French names as he desires.

The vegetable garden is well treated in Peter Henderson's Gardening for Profit, price \$1.50. White's Gardening for the South, price \$2, has hints which

apply to this coast also. Fearing Burr's *Field and Garden Vegetables of America*, price \$5, is the largest work on the subject. None of these will exactly apply to our climate; the weekly and monthly publications on this coast must be relied on for further hints. A chapter on garden herbs will be found in most of the books mentioned. The Patent Office Agricultural Report has an article on the culture of peppermint. So has the *Rural Press*, in several of the recent volumes. Any medicinal herb not ordinarily cultivated must have its botanical name ascertained, and then something can be found out concerning its treatment. The books we have named can probably be bought at any large book store in San Francisco.—ED. HORT.]

MADAME LAFFAY AND OTHER ROSES.—EDITOR HORTICULTURIST—Sir: I rather think it would have been better to have omitted Madame Laffay (misprinted Le Fay) from my list of winter-blooming roses. It comes a little too late in the season, and I would recommend, in place of it, *Bianque*, a tinted white rose, or *Cels multiflora*, although the last is, in some localities, affected by the mildew.—W. A. PRYAL, Temescal, Jan. 14th.

WILL SMILAX GROW FROM CUTTINGS?—B. F. R., Shasta Co., writes: "I procured a branch of smilax from a friend; will it grow from a cutting? I know it grows from tubers, but thought it would probably develop from an axil. I have had it a month and it still looks green."

[To grow smilax from a cutting is one of the things no florist expects to try. It grows so remarkably well from seed, that we search no further. Seeds are preferable to division of the roots, making better plants. We think it is quite likely a piece of smilax will keep green for some time; but we have no faith in

its growing, although in our multitudinous youthful experiments we can not remember that particular one.—ED.]

PARSON'S NEW WHITE MIGNONETTE.—W. A. PRYAL, Temescal, writes that: "From several years experience with Parson's new white we found it to be quite hardy, having stood the severest frosts, while *Reseda odorata* was totally destroyed. It makes a pretty hedge for the garden, as it grows to the height of three feet. A bed planted with this variety in the centre and the smaller variety near the edge, makes a fine appearance. We would sow this variety in preference to any other for the use of bees, as the amount of bloom during the season is much greater, and only one sowing need be made in two or three years. Although this is the best variety for bees, yet some of the more fragrant kinds should also be planted for the garden."

MR. J. G. LEMMON writes from Sierra Valley: "My supposition that the *Darlingtonia* found on Black Hawk ravine was a new species, was one of my early blunders. Later, in essays read before the Academy of Sciences of San Francisco, and also before the Natural History Society of Santa Barbara, I went over the whole ground, and described the plant at length, making five columns of the *Weekly Santa Barbara Press*."

[Mr. Lemmon mentions that he is busy arranging sets of plants from his large collection. These he expects to sell at the East, and we hope he will succeed, for he has made long, weary, and venturesome journeys and botanical explorations for many years past, and has done much to classify our native plants. He sends us a list of flowers, for which we are much obliged, and ends with complimenting the HORTICULTURIST to which we are getting used.]

Farm and Orchard.

NOTES FOR FEBRUARY.

Ordering Trees.—If the farmer contemplates an addition to his orchard, or wishes to plant a new one, or is laying out a garden, and wants ornamental trees and shrubs, it is, over most of our State, time he had prepared his soil and ordered his trees. There need never be any excuse for purchasing from irresponsible tree-peddlers, since we have so many reliable and energetic nurserymen of well earned reputation, whose advertisements are prominent every season. Of course it would have been better to have ordered earlier, but there is still time, and, if the ground is well prepared, there can be no better month for planting. In the extreme northern counties—Klamath, Siskiyou, Modoc, Lassen—it will not be possible to plant trees for a month more, and nurserymen will find that the trees they ship are subject to many delays from bad roads and swollen mountain torrents. In the central counties, many portions have not yet had sufficient rain to thoroughly prepare the land for tree planting. The southern counties have had a heavy rain-fall, and residents in that section will find it high time to order their trees.

The wise man, when he buys trees, goes to the best nursery he knows of. He wants good, healthy, reliable trees, and he is willing to pay a fair price for them. He knows that the first cost of a tree is a mere bagatelle compared with the after cost of cultivation and long waiting. If he can, he goes to the nursery and takes a look at the trees before he purchases. And, to repeat our warning, he does not buy from irresponsible parties. We knew a gentleman, in one of these bay counties, who

was inveigled, by dint of a chromo, and plausible deductions therefrom, into the purchase of ten small peach trees of what the agent assured him were entirely new in the State, and the best early peach. The modest price paid was one dollar per tree! The trees are just beginning to bear, and prove to be Hale's Early, which variety has for years been retailed at twenty-five cents per tree. Herein lies the profit of chromos—three hundred per cent. is not bad.

This may be a dry season in some sections. If any portion of our State fails to receive sufficient rain to insure crops, the blessed uses of adversity must be studied. The failure of only one season causes widespread suffering. Our vicious credit system pinches people with an unmerciful grip when a dry season comes. Farmers who have had the courage and ability to live on a cash basis are much the happiest men through the doubtful days. Whenever crops are short there must be a counterbalancing economy. Let no man fancy he has reached the limits until he studies Miss Corson's three and five cent dinners, and the dainty cheapness of French cookery.

The Vegetable Garden needs much attention. Radishes, lettuce, turnips, carrots, beets, onions, cabbage, cauliflower and celery may be sown in long beds or rows. Parsnips and salsify germinate early at this season. Some cabbage, cauliflower, and celery plants may be bought and planted out for an early crop. The sowing of peas must receive careful attention, and sowings at intervals of two weeks are desirable. As for varieties, there are certainly enough to choose from. None of the early peas, under any name whatsoever, are perceptibly superior to the old Philadelphia Extra Early. The later plantings must of course be some of the best mar-

rowfats, and wrinkled peas, which are far superior in quality to the early, smooth varieties. We always feel somewhat annoyed to see people planting early peas the year round, as if there were nothing better; another of the provoking sights is to notice how sometimes a whole neighborhood of thriving farmers will plant field corn, and that only, for the table, being either completely in ignorance of the superior quality of sugar corn, or considering it a dangerous innovation. When corn-planting time comes we sincerely hope that each and every farmer will plant sugar corn for family use.

The vegetables called in catalogues half-hardy are safe to plant now. At this season the vegetable beds ought to be a little elevated, and so rounded as to allow the surplus water to run off. After each shower wait for the ground to dry a little, and then rake the surface with a fine toothed rake. If the proper care is taken the whole surface may be rendered fine and mellow a few days before the seeds come up, and after the rows are clearly defined and the small plants have become stocky they may be again raked over without injury. The secret of good vegetables is in rapid growth. This must be encouraged in every possible way, by manuring the ground in autumn, and by the most thorough system of cultivation. A number of Italian gardeners will keep two or three men busy on every acre of ground, to say nothing of occasional emergencies requiring a larger force. Our little kitchen gardens need much attention; but they will amply repay the care of the farmer.

Pruning Trees, which was neglected last month, *must* be attended to at once. The dormant period of the orchard is nearly past. If we examine the apple, cherry, plum, and peach trees, we shall

find the buds beginning to swell, and even, in some sections, showing leaves and blossoms. It is high time to prune before the sap begins its most rapid flow. We have seen many orchards pruned when in full bloom; but such delay and long neglect are simply disgraceful. We said something about pruning last month. We now desire to repeat and emphasize those remarks. The best pruner is not the one who saws off the greatest number of large limbs, or who adds most to the farmer's wood pile. Save the trimmings of the orchard for fire wood, of course, and cut down, for the same purpose, any and all worthless or dying trees. But when the orchardist is in doubt as to whether he shall or shall not take off a certain large limb, let him avoid seductive thoughts of his wood-pile, and decide the question, from an unbiased standpoint, for the sole benefit of the living tree. To hack into fruit trees for the mere sake of firewood, when Eucalyptus grows so fast, and is also usually needed for a wind-break, ought to be entitled a felony, and is certainly an abominable abuse of man's knowledge of steel, and of edged tools.

Pruning Shrubs and Small Fruits.

—Currants, gooseberries, blackberries, and raspberries need close and careful trimming, taking out the dead limbs, thinning the new sprouts and shortening back the bearing wood of the coming season. The unusually wet winter of 1877-8 has caused a heavy growth of new wood, which must not all be allowed to remain, or the whole energies of the bushes will be exhausted, and the fruit will be small, and of poor quality. There are usually far too many suckers allowed to sprout from currants and gooseberries. This is partly because cuttings are not carefully prepared when they are planted. The eyes,

or buds, should be cut out with a sharp knife, from the lower end of the cutting to within two or three buds of the top. This will, in a large measure, prevent that troublesome suckering from the base of the cutting. The small fruits should be in regular rows, and trimmed to shapely heads. It is a shiftless piece of business to allow them to sprawl everywhere, for they look badly, and the fruit is troublesome to gather. In the nursery the small fruits are grown close together for the sake of propagation, which is, of course, a different matter.

Strawberries must not be forgotten. If there has been any lack during the past season, be sure and plant more. Plant out some of the runners anyhow, for you will get nice berries this season, only a little later than the crop from the old vines. Try some of the new kinds which are from time to time described. Give them all good culture—old varieties as well as new. A fragariculturist (that means a strawberry man) has many advantages on this coast, where soil and climate are so well adapted to this delicious fruit, and we expect to see many seedlings, as good as the best, originated in California.

Waste places around the fence corners, and out-buildings, must, if possible, be utilized this coming season. Aim to have everything compact, and much space will be saved. The labor of attending to stock, and of doing the many small "chores" of night and morning, will also be much lessened. Sometimes a fig, apple, or walnut tree can be planted in a waste corner, and protected for a few years, when it will be a source of beauty and usefulness. If the pasture is without shade, plant a few trees there, protecting them with stakes until safe from the horns of cattle. If any waste corner, formerly used

for woodpile, barnyard, pigpen, or corral, can be turned into a vegetable corner, or used for small fruits, the immediate yield will be very great. We have known good farmers who moved their cattle yards every ten years, making a garden on the spot, and found their profit in the increased yield of vegetables and small fruits.

Roadsides at this season need attention. A wealthy farmer, who pays no attention to his share of the public highway, is grievously neglecting his duty. The fences should be kept in good order, and ornamental trees planted, or a hedge made. Deciduous trees are much preferable to evergreens for road planting, because they shade the road less in winter, and are more arching and graceful in summer. The cork-bark elm, maples, pecans, walnuts, and similar trees are very desirable. Unity of action on the part of farmers, so that all might purchase together, at reduced rates, and all plant at the same time, would soon line our public highways with stately trees. Here is a work for the Grangers.

TO OUR FRIENDS.—As we look back over the past month, and think of the kindly notices and pleasant letters concerning the *HORTICULTURIST*, which have come to us from almost every town and county in this State, we feel that there is indeed a wide field for us to cultivate, and room for us to do our best and most careful work. Editor and publisher desire to return their thanks to those who have spoken so encouragingly, and have helped us with contributions, and with the sinews of war. We ask you to help us make this monthly a power for good, and an active element in the future of California, as homes are built, and gardens are planted, and new resources, year by year, develop.

Editorial Department.

THE MOST DESIRABLE QUALITY IN A NURSERYMAN.

The work of a nurseryman is fraught with dangers and responsibilities unknown to most other occupations. An ordinary farmer takes the chances of the weather, and of low prices; the profits of a merchant fluctuate with the supply and demand elsewhere; but the nurseryman takes these risks, and also others known chiefly to himself. His operations are not confined to any one season, but extend over the whole year. He must be sure that his stock is reliable, and healthy. Each variety must be kept separate, and true to name. Constant care is needed while the men are grafting, planting out the grafts, and during the budding season. The perpetual fear of the conscientious nurseryman is that he may accidentally mix his varieties, or graft from seedling stocks.

On the whole, the quality which the nurseryman needs most in the long run is simply *reliableness*. He must be accurate and pains-taking about little things. He must be willing to destroy all doubtful stock. He must hold the reputation of his establishment as worth far more to him than any mere temporary gain. Such a man will win in the end, although he is obliged to send men away when they ask for something he does not grow.

We have heard of nurserymen who could, and did, sell a dozen kinds of apples out of one row; but we fancy that when such orchards came into bearing, they told their own story of bitter fraud. Mistakes may sometimes occur, instances which will be remembered by our most responsible nurserymen, but every effort must be made to

render their occurrence extremely rare.

The man who buys trees is almost entirely at the mercy of the nurseryman. He may know a few leading varieties of peculiar growth, such as White Winter Pearmain, with its speckled limbs and rough trunk, or Yellow Newtown Pippin with the knobby crooks on some of the new wood; but, as a rule, he can only depend on the honesty and knowledge of the nurseryman. Few nurserymen are deliberately dishonest; it is entirely contrary to their interests to be so. The source of wrongly labeled trees, and much after-vexation on the part of buyers, is, in most cases, the result of carelessness, not of dishonesty. A man who intends to be honest may yet cause his customers a heavy future loss.

Therefore, after surveying the whole field, and duly considering the qualities most essential to the successful nurserymen, we have chosen simple reliability. Nothing else will wear. Nurseries lose their reputation, and run down, and go to ruin through no other lack; men with no other capital, build up a business, and leave it to their children. It seems to be the king-bolt of the whole affair. Of course it may be said that reliability is the essential in every other business, and so in the long run it is. But the nursery business is so completely founded on that, and a sale of wrongly labeled, or diseased trees, has such a blighting and immediate effect on a man's reputation that we had better let "reliability" stand as the chief requirement of a nurseryman.

SHALL IT BE A LAND OF HOMES?

California is a land whose story is far from being written, whose record-page is scarcely more than unrolled, whose glowing future urges us to renewed labors, as we plant gardens for those

who are to come. The careless, untroubled life of the early Spanish period, and the swift heroic days of '49, are alike a part of the past, yearly becoming more fit for chisel and brush, or for the subtle power of poet and novelist. The race of young men and young women for whom California means "home," are looking forward with hope and ambition—and they stand at the parting of two ways.

We have a true respect for the leaders and heroic followers in that Saxon advance—stalwart, eager, defiant of danger; that living, stormy flood which filled the deepest ravines, followed the fiercest torrents, climbed the snowy peaks, tracked the course of pre-historic rivers. With large and just reverence the young men of to-day honor the founders of our State. But in the train of gold-seekers who were strong, and won, came gold-seekers who were weak, and lost. Gambling, and a love of chance, and feverish risks, possessed many a man. There was evil, as well as good, hewn for the foundations. A State is the most sensitive of all structures. The secret thoughts of its founders become a part of its unwritten law. Somewhat too much of faith in luck, too much of scorn for small change, too much worship of "King Stokh" we have as a heritage.

It would be a curious bit of knowledge, could we ascertain how many of our provincially educated youths and maidens dream with rapture of city life in general, and hotel life in particular; of stock-deals, and hidden fortunes in speculative mines—and, on the other hand, how many have resolved to plant their feet on solid foundation, to own real estate, be it more or less, to breathe suburban air, to found a country home. These are the two ambitions; these are the two paths. Shall

California typify to the uttermost the modern supremacy of cities, or shall we reach to a riper manhood, a fuller happiness, a nobler development?

Cities we must have now, and in the smiling future; cities clustering around our placid bay, overlooking our rivers and broad valleys; but towns, and villages, and cultured farms, and miles of suburban residences around each city, shall testify that this is a land of homes, a land of reserved force, and mighty patience, and strength unspeakable. For out of no cities have the saviours of nations come; the soldiers of endless victories heard in their childhood the blowing of pines and the dread noise of breakers; the poets whose songs are dearest to men, knew the fragrance of the earliest flower, and the shy murmurs of many a summer wood. Children, too, need for many years to be often alone with themselves and with the simple suggestiveness of nature, which fosters health, clearness of thought, and largeness of comprehension. In the quiet country homes, which remain year after year in the same families, are fostered the goodness and strength which alone can meet fraud, corruption, chicanery, and the evils of this danger-laden age. Better than a land of cities and of corruptions is a land of homes. When a man has built a house, and laid out a garden, and begun to plant out trees, the world may forgive his earlier sins.

We have a land where every branch of gardening may reach its fullest perfection. Who can in even the faintest degree realize what San Francisco Bay might be a hundred years from now, with the shores crowded with stately dwellings, the brown Coast Range wooded and peopled, the waters dotted thicker with sails than New York harbor? What gardens we should see,

what costly conservatories, and what artistic combinations possible in few other places. The homes of to-day, let us not forget, become the palaces of the future. It is as if we planted ancestral oaks. This founding of homes is a blessed work. The best thing the Bible can say when it means there was peace is:

"And every man sat under his own vine and fig-tree."

LET US PLANT OAKS.

Our nurserymen say that it is hard work to persuade people to plant oak trees. Even men of wealth and leisure prefer something which "makes a show sooner," an Acacia, or Eucalyptus, or Monterey pine. This feeling has been carried to such an extent that if a gentleman plants Yews, Cedrus Deodari, Cedars of Lebanon, or royal Oaks, a common remark will probably be: "O, he is English," or "he has traveled in Europe," or "he must want to wait years; we can't." Now all this is folly; oaks, and other valuable trees, perfectly well adapted to our climate, are *not* slow growers, and they give much greater satisfaction than the common, coarser trees. It only takes good judgment, not necessarily English blood, to love oaks; though we confess that the Saxon race have always been oak-lovers, therein seeing the type of their heroes, and the sturdy, persistent strength, so dear to the hearts of all wrestling and victorious races. Let whoever loves strength, character, permanence, and hates temporary make-shifts, plant oaks for himself, and for his children's children, and to be a lesson to the age, and the community. We want homes which one family holds generation after generation; farms which son, and grandsons till; buildings massive, gray-grown, antique, moss-covered. We

want oaks that have seen successive centuries of human toil. If in this new, hopeful land we plant for no future, what are our children to do? Ours is the freshness and the first-fruit; the debt we owe to those who come after us can be paid only by laying wise foundations.

THE PLACE FOR A BOTANIC GARDEN.

We have one educational centre—our University. Its site was wisely chosen, in a place where nature has done much, and art can do more. The wide circle of San Francisco bay offers nowhere else such advantages of soil, climate, scenery, nearness to lines of travel, and magnificent outlook across the gleaming bay, and through the portals of the Golden Gate. When Oakland and Berkeley become one city, and the residences of wealth and fashion cluster yet more thickly along the many sheltered ravines, or stand on ridge and terrace, we shall begin to see that the University grounds have capabilities now unimaginable. Let us hope that they will become the pride of the whole State, nor that alone, but also a widening and beneficial influence to the whole coast. It is not pleasure grounds merely, whose predominant feature is in groups of Eucalyptus, and those common trees which every farmer plants, but an intelligently planned and practical Arboretum, which we need now above all things. Our University has done something; perhaps all which it could with the means at its command. But we do not know any more important work before it, or one which will so rapidly be of great value. We know of no enterprise which should win more active assistance from all friends of education. A Botanic Garden at the University means a multiplicity of things. Here each new plant should

be tested, and receive careful scientific study; the trees and shrubs adapted to our climate should be so arranged as to be easily examined; there should be separate houses for Ferns, Orchids, Palms, and other tropical families. The native plants of the Pacific Coast should receive the most careful attention. Of almost equal interest and value would be the native plants of Mexico, Central America, and the Pacific States of South America. Third in absolute importance would come the plants of Oceanica, Japan, Eastern Asia, and Africa.

No man may hope to do original work in these days, unless he has vast accumulations of material at hand, and a knowledge of what others have done. Given, a Botanic Garden, at Berkeley, equal to the Kew, Cambridge, or Melbourne Gardens, and we may, in due season, educate some young man to be a Hooker, Von Mueller, or Asa Gray. We shall at least disseminate a knowledge of rare and valuable plants, and so increase the pleasures and the comforts of daily existence.

The University is young, and teachers, students, buildings, apparatus, are the first needs of a university. Then there comes the work of the landscape gardener, and the coarser planting, which shall soonest produce an effect—wind-breaks, and shelters, and dark masses on rocky peaks, and islands of woodland. Next, and to this stage the University has come, there is a transition period, not yet Botanic Garden, a planting of rarer trees, shrubs, and flowers, an interest in the horticultural resources of the whole State, a manifest hopefulness, and gradual improvement. We have faith that this may develop, with wisdom and persistence, into a complete, practical, Botanic Garden—a place for scientific men to study, and where hints and discover-

ies go forth to the whole world. The friends of the University, and of scientific horticulture, must aid in this work.

THE PROPER USE OF EUCALYPTUS GLOBULUS.

Speaking in general terms, the Eucalyptus is to-day the most popular shade and forest tree in this State. It will beyond question add much to our resources, and largely increase the value of our lands. It has no superior as a forest tree on our mountain slopes or treeless plains; it will assist to drain our lowland swamps; it can be grown by the hundred thousand at so low a price that many men, who never planted a tree before, are willing to plant the Eucalyptus. Now, it is a great thing for this State that a tree of such rapid growth and good timber has been, and still is, so widely planted. We also note with pleasure the fact that there is an increasing demand for other members of the Eucalyptus family, such as *E. marginata*, *E. rostrata*, *E. sideroxy-lon*, and others, which our Australian authorities recommend highly.

We can not, however, spend a few hours in any of our towns or villages, without observing many residences which suffer from too much Blue Gum. Too many trees of this variety, in one yard, produce a sense of peculiar monotony. We admit that a young Eucalyptus is a most beautiful tree; a single specimen, well developed, and standing apart from other trees, or else rising from masses of shrubbery, is a stately column of green, feathery branches against the sky, like an Eastern Palm. But there are dozens of small farms and village lots, in Alameda County alone, where the dwelling houses are hid, enveloped, and overshadowed by Blue Gums. This is an abuse of a tractable and very worthy

tree. For the sake of health and comfort, we should plant only deciduous trees near the house. We need all the sunlight we can get in winter, and the driest walks attainable.

The *Eucalyptus globulus* has been largely planted as an avenue tree. Now, wherever the rainfall is abundant, there are serious objections to the use of any evergreen tree, for the water lies on the surface much longer, and the road remains bad much later in the season. The road masters of our country districts will bear us out in this assertion. Where the soil is sandy, or sloping, or the rainfall is light, there can be no objection to the use of *Eucalypti* as a roadside tree. Even in our moist valleys, if the road runs nearly north and south, and is wide, and well taken care of, no trouble need be feared. But narrow lanes and private roads ought not to be shaded in winter. Here we should use deciduous trees—maples, elms, walnuts, ashes, beeches, birch, hickories, deciduous oaks, and that almost endless variety of trees which we need to give our landscapes a charm they now lack.

WHERE OUR HOPE LIES.

Prof. Norton writes of our need of a more permanent population; of men and women whose homes are *not* for sale; of that honest, busy, intelligent class in whose hands self-government may be safely trusted. A thoughtful student of our polity sees much to condemn, and can not avoid some warning words. It is better to warn this young State of dangers in its path than to merely glorify its resources. If we desire to build up, on this western shore, a commonwealth of strength, refinement, and knowledge, we must be told of our dangers, we must believe in the dignity of labor, and we must fit our-

selves to receive the tide which soon will pour in upon us.

There is an immigration coming from the workshops of England, and from overcrowded trades and cities. The foot-hills of our Sierras will receive some. Others will help reclaim our tide lands, and clear the forests of Mendocino and Humboldt. We shall have new industries, and new markets. Our wines, oranges, olives, dried and canned fruits, raisins, nuts, and similar products, give us a firm hope of the future. This is the home and empire of horticulture. Colonies, and Anglo-Saxon workmen, are to be the true elements of our prosperity.

A MILD CLIMATE.

Mr. Honcharenko sends us to-day, (Jan. 16th,) a box from his sheltered home, Ukraina, in the foothills of Alameda County. The box contained new potatoes, some as large as a hen's egg, and of the best flavor; green tomato vines and fruit, as yet untouched by the frost; blossoms of *Nasturtiums*, grown in the open air; and a Taro root, of which last the eyes were taken and planted, while the rest of the root was cooked and experimented upon. This is the root from which the Sandwich Island "Poi" is made, and our present belief is that it is not an unpalatable dish.

Mr. H. sends a leaf from his diary for Dec. 30th which reads as follows: "8 o'clock A. M. Therm. 43°. Frost. Cucumber vines dead; water-melons also; nutmeg melons suffered. Taro, pumpkins, and buckwheat slightly frost-bitten. Cranberry beans also suffered; Lima beans slightly; tomatoes and potatoes injured in some places. 10 o'clock A. M. Therm. 45°.—Bees at work bringing pollen to the hives from blooming laurel."

About this time we of the open valley were having severe and constant frosts which killed lime trees, and injured the lemon and orange trees.

NATURAL HISTORY DEPARTMENT.

There is a wide field for the ardent naturalist on this coast. It is not only that there are new forms, as yet undescribed, to be discovered, but, in a large degree, that our climate permits, and invites, such constant pursuit of a knowledge of living and moving forms. We are inclined to think that many quiet persons have found this out, and are already studying the birds, or beetles, or moths, or butterflies, or humming birds, or rodents of this coast. One may have a private and somewhat persistent hobby, without becoming a second edition of "The Scarabee" which the Autocrat of the Breakfast Table immortalized.

So far the lovers of Natural History have had no organ on this coast. If there should prove to be a sufficient field, the HORTICULTURIST can have a department, in addition to its usual reading matter. We therefore invite correspondence on this subject. At present it would seem desirable that the majority of notes on Natural History which we print should have some reference to the interests of horticulture. The insects destructive to our plants; our native pests, the gopher and squirrel; the enemies of our fruits; the birds which are the friends of the horticulturist—these are topics worthy of our closest attention. We open our columns to the men and women, the students and teachers, who are interested in these topics.

LET US KEEP THINGS LIVELY.—Several interesting topics have been lately discussed in the pages of the HORTICUL-

TURIST. Last month and this we have given space to differing views on the winter-blooming roses. Now, if our leading gardeners, florists, nurserymen, and amateurs will narrate their experiences, we shall soon accumulate a great fund of information. We need a free and courteous interchange of ideas. Let us aim at arriving at the truth, and, when any subject of general interest is started, we hope that it will draw out the views of a great many people.

The consideration of the uses and proper place of the *Eucalyptus globulus* is also important. We should not object, for the present, to rose and eucalypti letters by the cart-load, but we hope our correspondents who wish their letters printed will write on only one side of their paper.

MR. W. B. WEST, of Stockton, whose letters from Europe, recently printed in the *Bulletin*, have been so widely quoted, writes us a letter which is quite too complimentary to print in full, but we can not refrain from giving our readers the closing paragraph:

"I was particularly pleased with the remarks of Mr. Ellis on the *Eucalyptus globulus*. I have seen many pretty places spoiled by planting too many *Eucalypti* and Monterey Cypress. We do need a Horticultural Society. Keep this before your readers, and perhaps we shall have one in time."

THE next number will contain articles from Dr. J. W. Gally, of *Overland* and *Argonaut* fame; Mr. G. Howatt, of the California Fruit Growing Association, Diamond Springs; Mr. W. A. Pryal, and several of our nurserymen and amateur cultivators of flowers. There will be full notes on the garden, lawn, orchard, small fruits, vegetable garden, greenhouse, and conservatory.

Editorial Notes.

JAPAN IRIS.—These are much more delicate in growth and flowers, than the ordinary garden Iris, or *Fleur de Lis*. They will not spread into large and troublesome clumps, but remain manageable to the end of the chapter. They ought to be grouped in a round or oval bed, the various colors all blending harmoniously with each other and with the grass-like leaves. The colors cover a wide range, from white to dark purple, and a clear blue, besides many finely mottled varieties. The treatment they require is of the easiest character. They thrive equally well on light or heavy soil, but they need an abundance of water immediately before they flower, and while they are in bloom. The quantity of water may then be diminished gradually, and as the leaves wither cut them off, letting the fleshy roots remain in the ground until they need to be divided.

BUDDING BRUGMANSIAS.—The well-known and favorite double white *Brugmansia* makes a fine stock for other varieties. There are several very beautiful *Brugmansias*, not yet widely distributed, which are likely to become popular when better known. If nurserymen find it difficult to get a stock of cuttings, they can usually bud them on the common variety. If this budding is done in the winter, the plants must be kept under glass, as the *Brugmansias* are very shy of frost.

ANOTHER SCALE BUG REMEDY.—Several correspondents of the southern *California Horticulturist* have most positively indorsed the value of kerosene diluted with water, as a destroyer of the scale bug. Twenty-five parts of water to one of kerosene is recommended. In our experience this has hardly been a strong enough mixture. Twelve or fifteen parts of water are sufficient. Care must be taken, when a syringe is used, to draw from the top first, and force the contents to the bottom of the vessel, thoroughly mixing the liquid before it is used. The use of syringe or swab is spoken of; now we have found the use of a medium sized atomizer, such as physicians use to spray the throat, a much better method of applying kerosene, or a mixture of whale-oil soap and free potash. The use of an atomizer was first suggested to us by Prof. H. B. Norton, of the San Jose Normal School. It is now the main dependence of several large orchardists and nurserymen. The two advantages claimed are, first the completeness of the work done by the fine spray which enters every crevice and touches every leaf; and second, the greater economy in the solution used. Not a drop need be wasted.

OLIVE PLANTING.—One of the trees of the future is, for this coast, the Olive. We expect, within the next ten years, to see immense groves set out, both in our fertile valleys and on our hillsides. The olive

will grow and thrive as far north as Reading, on the Sacramento River, and the red mountain soil is well adapted to its culture. It is a beautiful and profitable tree. We are glad our southern friends are saying so much about it, and we shall hereafter take up the subject at length. We have not forgotten the olive orchards of Santa Barbara, where we had so pleasant a visit with Mr. Jonathan Mayhew, some years ago. An olive orchard has the poetry of sacred themes, and the romance of the wierd Asian plains and heights; it is tropic, born of the desert dust, gray, massive, silent. The dumb olive, and the brooding palm are children of the mystery-haunted East. Let us plant them in our gardens instead of the tiresome *Eucalypti*.

A RUSTIC GATE.—Once, while traveling through the southern part of Monterey County, and far from the beaten track and well-known highways, we chanced to find a rustic gate of memorable beauty and fitness. It was at the entrance to a little valley from which the smoke of several cabins ascended. The road, which had wound for miles over rocky and barren lands, at last had crossed a hollow between two peaks, and there two massive oak trees stood, one on each side of the road, somewhat leaning towards each other, and their boughs interlocking overhead. It might have been that boards and scantling were not plentiful in this wild land; or perhaps the owner of the contiguous territory had an eye for the picturesque, or perhaps the gate, which swung between the trees, had been a suggestion of some artistic visitor. However these things may be, there was the gate, a boldly planned and fitly executed rustic gate, and by far the handsomest one we ever saw. The frame was made of trunks of scrub oak, about four inches in diameter, mortised together, and crossing at the corners. The filling in was done with crooked limbs of oak nailed firmly together. The hinges, of rudely hammered iron, were driven into one tree, and a sliding bar shot into a depression between two limbs on the other. Hard by were mossy rocks, and the trunks of fallen trees, draperied with wild clematis and blackberry vines. So long had it been since the gate had been opened, that a morning glory vine, which grew from a crevice in the rock, was beginning to ramble over, and its white blossoms were everywhere. All in all, it was a pretty picture.

SALVIA SPLENDENS.—We hope that no one will neglect this useful and brilliant old plant, when planning for the summer garden. No other plant is better adapted for grouping with *Ricinus*, *Chrysanthemums*, and ornamental-foliaged plants. Sometimes it will stand our winter, but usually perishes. Old plants can be lifted, cut back, and kept under shelter, but the true system is to start young plants from the tips of the side shoots. They may be planted out by the first of March, in the latitude of San Francisco, and begin to bloom when quite

small; forming, however, large clumps before autumn.

KEEP A FULL STOCK.—Nurserymen, as well as other business people, are sometimes caught napping. A sudden demand begins, and some variety long neglected is called for in every direction. If the nurseryman has too limited a stock, a loss of would-be customers results. It is much safer to plant even too much, and have to destroy a few, than to be compelled to send men away. The climate of different parts of our State varies so much that our nurserymen have to propagate a large number of varieties. But, keep a full stock of leading kinds.

ENTRANCES TO LARGE GROUNDS.—An archway over the main entrance-gate is always suitable, if it is not overloaded with ornament, and spangled with pretentious tinsel. There must be grace and airiness of effect, rustic work, or lattice, and vines entangled overhead; or there must be massiveness, serenity, ponderous inviolable granite, shutting the world out with a stately look. Of the former class we have much admired the entrance to the residence of the late J. Ross Browne, near Oakland; of the latter, the granite gate of the Mountain View Cemetery, which lies towards Piedmont, beautifully located on rolling hills. The grounds have always been well kept, and fitly planted, and the gate also is appropriate.

CALIFORNIA OLIVES.—Mr. Rufino, of San Jose, who has, for some years past, been manufacturing olive oil, and pickling olives, informs us that the olive now grown here, and known as the Mission variety, is a very superior one, and will answer every use of the orchardist, although for pickling the larger "Queen" variety might bring a better price, being more showy. Mr. Frank Kimball reaches a somewhat similar conclusion in a recent number of the *Southern California Horticulturist*. Inquiries relative to the olive have also reached us, during the past few weeks from Georgia, northern Texas, and Florida. We may therefore hope that this valuable tree will hereafter receive more attention.

MR. A. K. P. HARMON'S CONSERVATORIES.—During our school-boy days in lovely Oakland, then a quiet, refined town, now a bustling but still refined city, we used to love to spend the noon hour in rambling across the old cemetery and around the fern-covered banks of the arm of the lake, and sometimes beyond where the Convent is now, scrambling over the little knolls, gathering spring flowers, and weaving boyish fancies, until the well-known bell of the classic Brayton school rang out its warning. Sometimes a dozen of us pursued this noonday ramble, and I doubt not, often crossed the very surface of earth which Mr. A. K. P. Harmon has since made so beautiful.

Now it is not our idea in these brief notes to give any complete sketch of Mr. Harmon's grounds. All that we say elsewhere about the results produced, when wealth and refined taste join hands, is fully exemplified here. It is a costly place, but there is nothing cold or formal in the system of planting; there are spring bulbs blooming beneath the Rhododendrons, and the air is sweet with their fragrance. The massive rock-work north of the house is an example of what rock-work should be—the home-like element predominates.

As for the conservatories, which we examined under the guidance of Mr. Robert Turnbull, we can only express our pleasure at the neatness and care which were manifest. Our space forbids more than a brief notice, but we hope to give further notes at some future time.

The Camellia house showed a number of large and healthy plants just showing a few open flowers, and loaded down with buds. These were planted in a raised bed down the centre of the house, and had evidently received the best of treatment.

The Azaleas next received attention. Many were in bloom, and we had a long talk on their treatment. It is well known that Azaleas often fail here, and few of our nurserymen do much with them. We have, however, seen very thrifty ones at Woodward's Gardens. Mr. Turnbull thinks they require cool treatment through the summer, an exposure to night dews and a rest after blooming. The thrip is their great enemy. When the summer sun is very hot we would shade them somewhat.

In the house devoted to stove plants we saw Pine-apples in every stage of growth from the off-shoot just starting roots to the ripening fruit. A new evergreen shrub of rare beauty was in bloom. It was the *Toxiophlea spectabilis*, with choice fragrant clusters of the most waxen white. We noticed some choice *Caladiums* with their lanceolate leaves so brilliantly spotted and veined with all imaginable colors. There was also a new plant, the *Acalypha marginata*, which has leaves of a glowing purplish scarlet, hairy and serrate-edged. The shades vary in different leaves, and it is an effective plant at this season. A noble specimen of *Pandanus Veitchii* next attracted our attention, and near it was a *Pandanus Javanica*, so that it was easy to institute a comparison. *P. Veitchii* is a vast improvement in uniformity of growth, width of leaves, beauty and clearness of striping, and smoothness of the leaf. To those who only know *P. utilis* we will say that both these varieties exhibit distinct and beautiful white stripes on the leaves.

Ferns were of course abundant. Of value for use in halls or sitting rooms was *Platyceum Hilli*, and *Pteris aurea*. Another curious fern with black hairs rising from the surface of the thick leaf was the *Hymenodium crinitum*. The *Doryopteris nobilis* has large, thick, black-veined leaves, with five or seven distinct lobes. At the end of the Fern house was a fine specimen of *Begonia Froebeli*. It showed

the male flowers which were the largest, and on shorter stems than the female flowers. Mr. Turnbull is fertilizing the blossoms artificially to insure good seed.

In the large conservatory the fruiting Bananas, the tree-ferns from New Zealand, which are the largest we have seen, and the *Bignonia Venusta* which, now in full bloom, hangs in masses from the dome, are all worth mention. The two graperies, now being started up with a little heat, are important adjuncts. Nor should we forget the cucumber vines in one of the warm houses, for supplying the table during the holidays. Here the most approved English prize varieties are grown.

THE BONNET SQUASH.—Dr. W. B. Young, of Albany, Georgia, sends us by mail a "Bonnet" squash. It is a curious ribbed affair, as long as a man's arm, and bent like a cow's horn. It is black outside, and most of the interior is filled with a white, fibrous material, which is the same as that occasionally imported and sold in the Chinese stores for scrubbing sinks, and similar purposes. Dr. Young writes us that it is a great climber, and he considers the prepared fibre very valuable for use as a "dish-cloth which delights the cook," and also "as a substitute for the ordinary Turkish towel, which is entirely thrown in the shade." We shall await results.

MISSION SAN JOSE ORANGES.—Mr. E. L. Beard, of the Mission San Jose, sends us a number of beautiful oranges gathered from one of his trees. They are medium size, richly colored, thin skinned, and of good flavor, comparing well with the best Los Angeles oranges now in market. The recent long-continued and severe frosts have injured the trees. Indeed there are few spots near San Francisco more sheltered than the Mission San Jose, and the Warm Springs, immediately beyond. The figs, for instance, grown at the Mission are much sweeter than those grown in the valley nearer the bay, and we may add thrive better. The Olive, also, finds this a congenial soil and climate.

EARLY HYACINTHS.—If we attempt to force hyacinths so as to have them in bloom by Christmas, it will be hard to procure a good truss, or long flower-scape. The same bulbs which, two months later, would bloom well, give us only a short, not well defined, knob of flowers. It is agreed on all hands that the Roman hyacinths, a section of smaller growth, and smaller flowers, is far preferable for early forcing. The only secret about growing hyacinths in pots, is to keep the pots covered, and get the roots well advanced before the leaves start. Hyacinths planted during this month, in the open ground, will need little care to insure a fine display.

TRIMMED VS. UNTRIMMED GARDENS.—No question was ever entirely one-sided. We have advocated neat gardens always, but the severe frosts of the

last two months have touched with comparative lightness, gardens which were overgrown, entangled, and untrimmed, the masses of leaves and limbs proving a decided protection. Those very active persons who trimmed their gardens early are to be pitied under these circumstances. In both Oakland and San Jose the close, shrubby, rather neglected gardens withstand the cold weather far better than those gardens where everything is cut to a naked stem. This is doubtless owing in part to the constant watering practiced on expensive places. Constant irrigation through the autumn is a poor protection for cold weather. We must not overdo the use of water in our gardens.

In this connection it may be said that roses, fuchsias, and similar plants bloom better, and are more easily renewed, when trained as shrubs, that is branched at, or near, the ground, and are probably safer against unusual frosts. A garden may be neat and pleasant to look upon without having every plant tortured, against natural habits, into the similitude of a mushroom. In this connection we may quote a recent remark of the *Garden*, to the effect that the training of plants is carried too far whenever the natural habit is obscured.

SOME NEW FORAGE PLANTS.—Our valuable correspondent, W. A. Sanders, of Fresno, sends us his seed circular. He offers *Pencilaria Spicata*, China Corn, white and brown Egyptian Corn, Amber Cane, and other seeds of his own growth. Mr. Sanders has spent much time and money in testing new forage plants, and we believe those we name will prove of great value to the interior valleys of our State. The Egyptian Corn has given a heavy yield in Alameda County, but the nights are rather cold for it.

THE CLIMBING HYDRANGEA.—We notice that Prof. C. S. Sargent, of Cambridge, puts in a demurrer. He thinks that the value of this plant has been overestimated, and it seems to have been figured by Siebold and Zuccarini more than forty years ago, but has not seemed worthy of introduction. Now that is the kind of talk we like. It is far better to begin with a poor opinion of a plant, and gradually improve it, than to blow a loud preliminary trumpet, and then find that the music is not good—is a failure in fact. If a new plant can only be widely "puffed" it becomes a profitable affair for the first propagators. We believe in testing new plants and fruits; but we are quite certain that not over one in a hundred ever amounts to much. Still we must keep on purchasing, and making experiments, because one acquisition redeems a hundred failures. The *HORTICULTURIST* will always try to hear both sides, and render an impartial decision.

THE KERN VALLEY COLONY.—Mr. H. P. Livermore, of Oakland, sends us a pamphlet description of this enterprise. Kern County lands have greatly

increased in value during the past four or five years. The possibilities of this region for successful orange culture, and the growth of all semi-tropical fruits, are beyond question. We believe the colony is well managed and prosperous.

JAPANESE METHODS OF PACKING PLANTS.—Persons who have had the pleasure of observing a shipment of Japanese plants unpacked will soon believe that painstaking is a Japanese characteristic. Sometimes little baskets of split and woven bamboo are used, in which the plants are closely packed, after having had moss tied about the roots. The tops are protected by long bamboo splints, and perhaps covered with straw-matting, and tied with straw rope. The most valuable plants are packed in long boxes which outwardly present an appearance similar to those used by Eastern nurseries. But whoever attempts to open them will find a curiously elaborated system of wrought nails, and almost unassailable fastenings. We do not think that the Japanese take sufficient care to secure their small, painted labels to the plants. We have observed shipments in which half the labels were, on unpacking, found in the bottom of the box.

LILIES IN MUD BALLS.—Japanese gardeners are full of hints for us. The lily trade of Japan is growing to be something of great importance, and the lilies usually arrive in perfect condition. This is owing to the method of packing. Instead of using sand, or sawdust, or dry moss, the bulbs are "puddled," each separately in a thick clay mud, until each one is coated a quarter of an inch thick. Thin paper is, in most cases, then wrapped around to keep the mud from cracking off. These lily mud balls are then packed in a box and some light material sifted in between. Now this is a hint for any one who wishes to send a few bulbs to a friend East, or in Europe, as well as to the professional shippers.

A FRIEND OF HORTICULTURE.—Horticulture, we hope, has a great many friends and admirers. But this particular item relates to a hitherto unknown and unhonored toiler in what might be called the defense of plants and trees from unprovoked assaults. Modest merit does not seek notoriety, but we are determined to tell the story—in strict confidence. We are informed by a gentleman of Alameda County, that a large gray cat living on his farm has brought over five hundred gophers to the house within the past year. The cat deserves a necklace of gopher claws.

THE NATIVE FLOWERS AND FERNS.—We have just received parts VI to XII, inclusive, of this treasure. We are more than ever impressed with the easy grace and unobtrusive knowledge evident in the descriptions. Among the plates we have greatly admired *Actinomeris squarrosa*, an instructive com-

positæ; the pretty *Calla palustris* which we have seen in boggy places. The plate of *Calochortus luteus* will have an especial interest to Californians.

THAT BEAUTIFUL FERN.—"L. H. T.," who gives us this month a glimpse of her conservatory, and the hanging cones, so daintily covered with ferns and moss, has sent a few pressed leaves "which were picked from one of the cones." The *Cheilanthes Californica* is a beautiful fern, and these delicately dwarfed leaves won our ardent admiration. If our readers have a similar "happy thought," let them take the long, light, and peculiarly open cones of *Pinus Lambertiana*, or Sugar Pine. We have a fancy that this is what our contributor used, and we should be glad to know.

ANOTHER NEMOPHILA LOVER.—Mr. Felix Gillet, of Nevada City, in a very characteristic letter, declares his allegiance to the *Nemophila*, which he declares to be "*ma fleur de predilection*," or, his "favorite flower." Now here is a happy thought, equal to one of Burnand's best. Suppose the flower-lovers whisper the names of their favorite flowers. Let us consider. There are the winsome dark-eyed pansies, and the fragrant lilies, clothed in white, and the rose-blossoms, tremulous with all the songs of love, and the heliotrope, whose breath is a dream of Italy, and others, too many to name. The editor will not commit himself at present.

A COUNTRY GARDEN.—We recently visited the garden of Mr. A. O. Rix, of Washington, Alameda Co., and found some large and healthy plants which deserve notice. Beautiful specimens of *Ribes sanguinea*, or red flowering currant, *Magnolia grandiflora*, *Bignonia radicans*, *Laurestinus*, *Daphne odorata* in bloom. The other plants show good treatment.

The roses embrace some forty varieties of the very best known. We noticed *Ophir*, *La Pactole*, *Lord Raglan*, and many others. The conservatory contains fifty-nine named varieties of fuchsias, besides some whose names have been lost. We consider this a very good amateur collection of fuchsias, and we wish its owner all possible success.

WOOD FOR ORCHID BLOCKS.—The character of the wood chosen would seem of little importance, but it really deserves careful attention. A writer in the *Garden* says that durability is the first requisite, since soft woods soon decay, and necessitate a removal of the plant, and danger of breaking the roots. He recommends the heart-wood of oak, cut up into lengths, and split, not sawed, to the proper thickness. Our most durable wood will probably be the redwood, or else the white cedar. Bark looks well a short time, but soon decays. It is a good plan for the gardener to prepare suitable blocks of the best wood, and keep them on hand, instead of using whatever comes handy, when a lot of Orchids arrive.

Pomological Notes.

SOUVENIR DU CONGRES PEAR.—There is a constantly increasing demand for this pear at the leading nurseries. Orchardists look upon it as the most promising new variety for market. Fruit of large size and good quality. Tree vigorous and productive. Ripens before the Bartlett.

CALIFORNIA PEARS IN ENGLAND.—The *Garden* of December 21st says that some fine specimens of Winter Nelis pears, imported from California, may be seen in Covent Garden Market. Now this is encouraging to our fruit-growers. We have the world for a market; let us use our opportunities. Thousands of acres in the warm belt of the Sierras need only skill and energy to be made vast orchards. Bring on your colonies from the cities of the East and Europe. Let them take our hillsides and plateaus, and canyons, making homes everywhere.

THE OREGON CRAB APPLE, (*Pyrus rivularis*, Dougl.)—This is a small tree found in the northern counties of California, and northward to Alaska. The wood is hard and tough, and the fruit is well flavored. It is most common in Oregon, where it is said to form orchards on the prairies in favorable localities. The fruit is as large as a cherry, and is used by the natives for food. We have seen this tree growing in Trinity County, near the Hay Fork branch of the Trinity River, where it forms thickets with wild cherry and wild plum intermingled. We heard that the Baldwin apple had been grafted upon this wild crab, but had not yet fruited. It might make a good and hardy stock. We should feel obliged if any reader who is living where this apple is found would send us a few roots and scions by mail, so that we may test the influence of cultivation upon it.

GOLDEN QUEEN GRAPE.—Several correspondents of the *Garden* state that this is not only the best new grape which has been introduced for many years, but also one of the finest white grapes in cultivation. The following list has been recommended for cool house: Madresfield Court, Black and Early White Frontignan, Black Hamburg, Black Prince, Royal Muscadine, Golden Queen.

THE OHIA OF THE SANDWICH ISLANDS.—The native apple of the Sandwich Islands is called the Ohia. It grows on the mountain sides, extending for miles, and loaded down with fruit. One writer says the fruit is "juicy and red, but of poor flavor." Another traveler describes it as "delicious." The Ohia can not be kept more than a few days after it is picked. We have asked several persons who are well acquainted with this fruit in its native woods, and the weight of evidence appears to be that it is of good flavor, and would be popular if it bore carriage

to market. A writer in the *Gardener's Monthly*, some time ago, asked whether it was yet grown in California? Here is a chance for our nurserymen.

New & Desirable Plants.

[We shall glean from our exchanges and correspondence, notes on plants either new, or of promise in our climate. Our nurserymen are invited to send notes on any interesting plants received.]

THE DOUBLE SCARLET AVENS, (*Geum coccineum*, fl. pl.).—This brilliant hardy border plant commences to flower in May, and produces a continual succession of blossoms until October. It is one of the most easily managed of perennials, and may be increased by seeds, or by division of the roots in spring. The *Garden*, No. 370, gives a colored plate, and a description, which we have condensed.

ANEMIDICTYON PHYLITIDIS TESSELATA.—This handsome fern belongs to the section known as Flowering Ferns, from the peculiarity which they possess of producing their inflorescence, or rather fructification, on a separate branch, which may be taken to represent a panicle of simple flowers. The sterile branch of the frond is serrate-pinnate, with rather distinct oblong-lanceolate pinnæ, which are some three or four inches long. From the base of this sterile branch, or frond, spring up a pair of spore-bearing panicles, which are also divided into linear pinnæ, each clustered with tufts of spore cases. This species was introduced from Brazil. It is a strikingly ornamental evergreen stove, or warm greenhouse fern.—*Garden*.

STUARTIA PENTAGYNIA.—This is one of our handsomest American shrubs, and is a native of Virginia. It was first introduced by Messrs. Parsons & Sons, of Flushing, at which time Mr. C. M. Hovey, of Boston, published a full account of it. The flowers somewhat resemble a large, single, white Camellia. Both this, and also *S. Virginica*, ought to become popular on this coast, as they are perfectly well adapted to our climate.

STRELITZIA REGINÆ.—This, with its curiously shaped and gorgeous blossoms of orange and blue, is a striking greenhouse ornament. All the species are natives of the Cape of Good Hope, and the seeds eaten by the Kafirs.

The *Belgique Horticole* figures *Pavonia Makoyana*, a malvaceous flowering shrub. The flowers are much like those of *Goethea strictiflora*, *Botanical Magazine*, plate 4,077, but instead of being scattered all along the branches, they are clustered at the ends, and are borne on slender stalks about one inch long. In color they are of a rich rosy red, that is to say, the bracts of the outer calyx, the true sepals and petals, being relatively dull colored. The col-

umn of stamens and styles projects about one inch beyond the petals, and the anthers are of a bright blue, contrasting well with the rosy red of the floral envelopes. In cultivation, *Pavonia Makoyana* forms a shrub from three to five feet high, with straight branches, leafy at the tips. The leaves are narrow, toothed on the margin, and about six inches long. The plant is a native of Brazil.—W. B. HEMSLEY, in *Garden*.

BEGONIA POLYPETALA.—A very distinct species with splendid red flowers. Root tuberous. Habitat, the Andes of northern Peru. It is a species which will flower in winter, from October to January. Introduced by Messrs. Fräbel, but not yet sufficiently multiplied to allow its being offered in commerce.—Condensed from *Garden*.

Catalogues, etc., Received.

[We shall acknowledge the receipt of all Seed or Plant Catalogues, Pamphlets, Reports of Horticultural Societies, Agricultural Reports and similar documents.]

Descriptive Catalogue and Price List of Plants and Trees, grown and for sale by Felix Gillett, Nevada City, Cal., 1879. This is a neat Catalogue, and Mr. Gillett offers a large number of foreign varieties, mostly of French origin. He has for some years past been interested in Strawberries, and published a small work on Fragariculture.

Trade List of Plants and Seeds for January. Peter Henderson & Co., 35 Cortland Street, N. Y. A well-known monthly publication of a leading Eastern Seedsman and Florist.

Wholesale Price List of the Plant Seed Company, St. Louis, Mo.

Price List and Catalogue of Semi-tropical and Northern Fruit Trees, for 1879. Fisher, Richard & Co., Los Angeles, Cal.

Trade Catalogue for 1879 of Flower, Tree, Vegetable, and Agricultural Seeds; Wm. Buechner, Erfurt, Germany. This catalogue contains a list of 1536 varieties of flower and tree seeds alone. C. Raoux, New York, is agent for the United States.

Wholesale Catalogue of Forest Trees, Conifers, Shrubs, Roses, etc; Peter S. Robertson & Co., Edinburgh, Scotland, 1879. We notice that this catalogue offers no less than ten varieties of our Ceanothus, and many others of our native shrubs.

Trade seed list of Flower, Tree, and Vegetable Seeds, by Platz & Son, Erfurt, Germany. This is a most complete catalogue, with the usual two pages of novelties, and the usual weak English of continental catalogues.

A General Trade Catalogue of Seeds and Plants, offered for the season of 1878-79, by Chas. Huber & Co., Hyeres, Southern France. Some things about this catalogue are very interesting. We observe that over thirty varieties of Oleander are

offered, of which twelve are marked double. Among the "novelties," *Salvia Schimperii*, from Abyssinia, is heralded with more than the usual flourish, but we have, through the bitterness of many an experience, learned to have little faith in floricultural novelties. We prefer violets and roses, if it is all the same.

C. F. Creswell's List of Seeds, indigenous to Australia, Tasmania, and New Zealand, No. 37 Swanson St., Melbourne. This is a list of seeds of native trees and shrubs exhibited at the last Paris Exhibition, by an enterprising Australian seedsman. The catalogue gives the natural order, the botanical name, the native or common name, and the district where the plant is found. This renders it valuable for reference. We notice many plants not yet known on this coast. Twenty-five species of *Acacia* are offered, and fifty-four varieties of the *Eucalyptus*.

Vick's Floral Guide for 1879. This comes to us with a group of Peonies for a frontispiece; with a unique cover, half moulding, and rustic bridges, and half pansies and pond-lilies; and with those clear directions, and that vivacious style which have made James Vick so popular. Within the last few years Mr. Vick has added a plant department, and seems in all respects up to the times.

E. Y. Teas, Dunreith Nurseries, Henry Co., Indiana. Price List and Circular.

Flower Seed Catalogue of J. W. Wunderlich. Frankfort-on-the-Main, Germany.

The Garden "Almanack" for 1879. This is the annual gift of the publishers of the English horticultural weekly, the *Garden*. It is a calendar of gardening operations for each day in the year. Although not suited to our climate, much valuable information may be gleaned from it, and, at any rate, the painstaking labor manifest in its compilation, give one a pleasurable feeling. The "Garden Almanack," with its old-fashioned "K," is worth seeing.

Reviews and Exchanges.

[All books on subjects in any way connected with horticulture will be reviewed in this department. Publishers are requested to state the price of each book sent.]

THE NATIVE FLOWERS AND FERNS OF THE UNITED STATES. By Thomas Meehan.

This fine illustrated work, for which we are indebted to the courtesy of H. Keller & Co., has occupied much of our spare time for some weeks past, and has been duly admired by all our visitors.

The first series consists of twenty-four parts, issued by subscription. Each part contains four chromo-lithographs, and sixteen pages of letter press. The paper is of the finest quality. The size is royal octavo. It is understood that other series will follow this. They may equal, but hardly surpass, the

mechanical, artistic, and literary excellence of the present series. The best botanical authorities, and the leading horticultural journals, have commended this work in the highest terms, as a beautifully illustrated and authoritative description of our choicest native flowers and ferns. If people always wrote, publishers always published, and agents always sent editors such books, reviewers would need no inkstands of gall, or of vitriol, and they might deal in pleasant phrases only.

In the words of Thomas Meehan, "this work is not exclusively botanical, but it is intended to be a contribution to general intelligence. It is an *Anthology* in the truest sense of the term." In accordance with this plan Mr. Meehan has selected the classical flowers of American song and romance; the flowers which lie closest to the hearts of childhood, the Spiderwort and Wood Anemone, or wind-flower, the Orchis spectabilis, the flowering Spurge, fern-leaved Gerardia, and many others. The Carolina Jasmine, Swamp Rose, and other favorite flowers of the south are here; the flowers of the west and north appear; California and the Pacific Slope are largely represented. The plates of *Aquilegia chrysantha*, and *Calochortus luteus* will please all Californians. Of especial merit are also the plates of *Phlox subulata*, *Houstonia cærulea*, and *Iris versicolor*. We know not what beauties the next numbers may have in store, but we shall look forward to their arrival with delighted anticipation.

PICTURESQUE ARIZONA. By E. Conklin, artist and correspondent for Frank Leslie's Publications.

Mr. A. T. Dewey has sent us this book for review. Only those portions relating to agriculture, and the horticultural resources of Arizona, belong properly in this department. The chapters on the Moqui and Zuni Indians, and their methods of tilling the soil, are worth attention. There is doubtless good farming land in Arizona; much of it, however, needing irrigation. The mining resources of that region have not been over-estimated, and the mines will always furnish a good home market. If a man is thinking of going to Arizona, he will get many valuable hints from this volume.

The *Florida Dispatch*, a bright little weekly, comes as usual full of horticultural items. It is the official organ of the Florida Fruit Growers' Association, and it is doing much to advance the interests of that section. It is always profitable for us of the Pacific Slope to compare notes with our southern friends, and therefore we welcome the *Dispatch* to our exchange table.

The *Journal of Horticulture*, No. 922, has just been received. This is a very successful and popular English weekly, devoted to cottage gardens, small farms, poultry yard, apiary, dovecote, etc. It is a cheaper publication than the *Garden*, and gives com-

paratively few illustrations, but the articles are all pointed and readable.

The *Gardener's Monthly* for January gives an illustration and description of *Adiantum palmatum*, the new fern discovered by M. Roezel in Peru. An article on gardening in Austin, Texas, is worthy of notice. The editorial notes are numerous and suggestive.

The *American Farmer* for January gives an interesting report of the District of Columbia Horticultural Society, before which Prof. Taylor gave an interesting lecture on Cryptograms, which are divided into five grand divisions—Mosses, Lichens, Algæ, Ferns, and Fungi. His lecture was chiefly devoted to the last division.

The *Boston Journal of Chemistry* for January is, as always, worth study. Scientific Agriculture, Botany, Medicine, Pharmacy, and Practical Chemistry, each receives a share of attention. The work of the farmer and horticulturist is so often a dealing with hidden forces, and new combinations, that a knowledge of chemistry, both organic and inorganic, may well be called one of the essentials.

The *California Farmer* keeps on its accustomed way. It is the oldest agricultural weekly on the coast. We are indebted to Col. Warren, and his brisk foreman, for many past kindnesses, and we wish them a happy and prosperous year.

Our friends of the country press, from San Diego to Shasta, greet our January number with words of kindly commendation. For this we thank them and shall strive to deserve their continued good will.

The *American Agriculturist* for January is full of interest. Kieffer's Hybrid Pear is figured and described. Peter Henderson writes about a new striped tea rose, supposed to be a sprout from Bon Silene, and named "American Banner." We only hope that this new rose will not repeat the familiar and disastrous history of the "Beauty of Glazenwood." The numerous practical hints, and the dozens of illustrations, are distinguishing features of this, which is one of our favorite exchanges.

The *Queenslander*, Brisbane, Queensland, does not give us many horticultural items, but we recognize its value as a commercial, mining, agricultural, and industrial review, which exhibits close condensation, and is always welcome.

The *Australasian*, Melbourne, is a ponderous affair. We observe in the notes on gardening operations that our Australian friends are digging up their withered spring bulbs, staking their dahlias, and holding their flower shows, it being winter there. Of course, geographically speaking, we all knew that

our winter was their summer, but the fact acquires new force as, now, while it rains here, we read of summer gardens there.

The last number of *The Farm*, Dublin, contains a readable article on New Zealand, a most promising field for British emigration.

The *Cultivator and Country Gentleman* comes as an old friend. It was the first agricultural journal we ever read; there was a sunny corner in the old garret where piles of magazines were a boyish delight. It is now a little larger, possibly a good deal better; but the field it occupies is just the same.

The *Willamette Farmer* is very wisely urging the claims of the foothills of Oregon. For small farmers, dairymen, and fruit raisers an undulating, somewhat timbered, country offers many advantages.

The *Prairie Farmer*, Chicago, recently gave a report of the Illinois Horticultural Society; we hope the address, etc., will be printed. Where is our State Horticultural Society; and when will we have a Pomological section?

Publishers' Notices.

OUR CLUB RATES.—For five copies of the HORTICULTURIST to different addresses in any part of the United States, \$11.25; for ten copies, (and one copy to the getter up of the club), \$20. Special rates for subscriptions exceeding ten copies.

The HORTICULTURIST will be found for sale at all the leading book stores.

Journals which notice this monthly, are requested to send a marked copy to the Editor, at Niles.

Lists of people who love gardens and orchards are still in order.

"The Sineus of War" are the one thing needful. The more subscribers we have, the better a journal we can publish. We feel encouraged; but we hope our friends will not weary in well-doing. Please send in the names, get up clubs, constitute yourselves local agents. Let us keep things lively.

Mail a copy of the CALIFORNIA HORTICULTURIST AND FLORAL MAGAZINE to your friends East. It is the most original and characteristic monthly on the coast. It will do much to encourage immigration, and extend a knowledge of our resources. Copies for mailing can be had at this office.

CUT OR UNCUT NUMBERS.—It is well known that binders prefer copies of magazines which have not had the edges trimmed, for they can be made to appear better when bound. Now the publishers of the HORTICULTURIST have been in the habit of laying aside a number of uncut copies for their own bind-

ing. It occurs to us that some of our subscribers would prefer to have their copies uncut. If so, they have only to drop us a postal card, and we will send them the uncut edition.

REMITTING MONEY.—Money for subscriptions and advertisements must be forwarded to the publishers. Send by Wells, Fargo & Co.'s Express, or by a post office order, or in a registered letter.

A LIST OF NURSERYMEN, ETC., WANTED.—We desire to have a complete list of nurserymen, florists, gardeners on private places, and landscape gardeners who reside in the Pacific States. We also desire a list of the wealthy gentlemen, on this coast, who take an interest in horticulture. Lastly, we need a list of persons who are making botanical or scientific collections in any part of the State. Our friends will confer a favor by sending names of any such persons as they may chance to know.

TO ADVERTISERS.—It is a trite maxim that the value of an advertising medium depends chiefly on the character of its circulation. A weekly often circulates a larger number of copies, but the monthly goes among a wealthier class, is read with more care, and preserved much longer. These advantages make the latter much the best advertising medium.

Moreover, the place in which a man should advertise his business is in the journal read by the class he wishes to deal with. Nursery stock; plants, seeds, and bulbs; greenhouse appliances; floral ornaments; trellises, wire-work, fountains; rustic-work and rural adornments; books on gardening and kindred subjects—these and many other industries can reach their best class of customers by advertising in the CALIFORNIA HORTICULTURIST.

If a man desires to reach either the class of wealthy farmers, nurserymen, and horticulturists, or on the other hand, that large and constantly increasing class of merchants and professional men who are improving small plots of ground, and making beautiful homes, he can not, we are assured, gain their attention through any better medium than the HORTICULTURIST.

Mr. W. B. Hardy, the well-known bookseller of Oakland, will keep the HORTICULTURIST on hand, and is authorized to take subscriptions. This will prove a great convenience for our Oakland friends.

Our San Jose friends will always find the HORTICULTURIST at Mr. Guppy's, on First Street.

BOUND VOLUMES.—The HORTICULTURIST reaches the second month of 1879 with continued accessions to its corps of contributors, and redoubled energies. We find that we can furnish most of the back volumes for \$2 per volume unbound, and \$3 bound in green or brown cloth. Our friends who have made inquiries will please take note.

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DIVIDEND NOTICE.

SAVINGS AND LOAN SOCIETY,

619 Clay Street.

At a meeting of the Board of Directors held this day, a Dividend, free of Federal Tax, of Seven (7) per cent. per annum was declared, on all Deposits, for the term ending December 31st, 1878, payable on and after January 15th, 1879.

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OPINIONS OF THE PRESS.

What Thomas Meehan says:

THE CALIFORNIA HORTICULTURIST.—"Our esteemed correspondent, Charles H. Shinn, becomes the editor of the CALIFORNIA HORTICULTURIST from the 1st of January of this year. Mr. S. is so well acquainted, practically, with the needs of horticulture on the Pacific coast, and is, withal, so cultivated and forcible a writer, that we anticipate a valuable coadjutor in progressive horticulture by our friend's accession to the editorial chair."—*Gardeners' Monthly*.

We have received the January number of the CALIFORNIA HORTICULTURIST, published by John H. Carmany & Co., San Francisco. Chas. H. Shinn, whose able contributions to the press upon horticultural and other topics have given him so favorable a reputation, has taken editorial charge of the same. The present number is replete with interesting editorial matter, excellent correspondence and choice selections. Every person interested in horticulture should subscribe for it. Subscription, \$2.50 a year, in advance. B. F. Roberts, of Anderson, is agent for Shasta, Tehama and Trinity counties.—*Shasta Record*, Millville, Shasta County.

"The January HORTICULTURIST is full of just what is needed. It gives abundant promise of future usefulness. It will give me great pleasure to aid in extending its circulation."—E. H. SMYTHE, Santa Rosa.

"The January HORTICULTURIST was a very great improvement. I hope gardeners can be got to discuss through its columns any topic of general interest, such as Mr. Ellis's."—R. TRUMBULL, Nurseryman, East Oakland.

"I like the HORTICULTURIST very much."—W. A. SANDERS, Seed Farm, Fresno.

"The January HORTICULTURIST was a real surprise and delight, and it promises still greater success in the future. Long live the HORTICULTURIST!"—MRS. C. A. COLBY, Benicia.

THE CALIFORNIA HORTICULTURIST.—The January number of this valuable monthly is on our desk. The editorship is now in the hands of our literary young friend, Chas. H. Shinn, of Niles. His practical experience in his father's nursery, joined with his good taste and indefatigable industry, will be sure to make him a successful editor of this style of publication. We find, in fact, on looking over this number, the marks of his good judgment in the choice of subjects, as well as the evidence of his fine taste and literary skill in the criticisms and editorial notes. We have no doubt that Mr. Shinn will make a success of this work in a pecuniary as well as an artistic and useful point of view. He has evidently found a congenial sphere of practical usefulness, in which he has our heartiest wishes for complete success, surpassing even his own poetic anticipations.—*Washington Independent*, Alameda Co.

Charles H. Shinn has assumed the editorial management of the CALIFORNIA HORTICULTURIST, and the January number shows great improvement.—S. F. *Bulletin*.

"Your first number of the HORTICULTURIST is a triumph!"—PROF. H. B. NORTON, Norman School.

"I note with interest the new departure of the HORTICULTURIST. You are certain to enlarge the usefulness thereof."—H. P. LIVERMORE, Oakland.

The CALIFORNIA HORTICULTURIST AND FLORAL MAGAZINE, published by John H. Carmany & Co., San Francisco, began its ninth volume on the 1st instant under the editorial control of Mr. Charles H. Shinn, of Niles, our Alameda County poet and literature. With the subject of horticulture Mr. Shinn is thoroughly and intimately acquainted, and his opinions on these subjects are marked with an earnestness and intelligence which give them peculiar force. The HORTICULTURIST for this month is an admirable number in all respects. Terms: \$2.50 per annum; single copies, 25c.—*Alameda Enquirer*.

THE CALIFORNIA HORTICULTURIST.—We have received No. 1 of Volume IX of the CALIFORNIA HORTICULTURIST AND FLORAL MAGAZINE, which enters upon a new era in its chosen sphere of usefulness under the editorial management of Charles H. Shinn, of Niles. The present number is replete with useful horticultural information, and many of the articles will compare favorably with any of a similar character published anywhere in the United States. A full page colored plate, representing the California Pitcher Plant (*Darlingtonia Californica*) is one of the features of the work, and reflects credit upon the designer and the printer. There are nine original articles in the number contributed by the best botanists of the State. The selections and editorial matter are first-class, and we predict a grand success for this enterprise under Mr. Shinn's management, as he is not only thoroughly familiar with his work, but has the tact necessary for the conduct of a magazine of this description. Copies may be obtained at W. B. Hardy's bookstore at the rate of 25c. each, or \$2.50 per year.—*Daily Radiator*, Oakland.

MOUNTED THE TRIPOD.—Mr. Charles H. Shinn, of Centerville, in this county, and who is well known throughout the State as a brilliant writer and close student, has assumed the editorial management of the CALIFORNIA HORTICULTURIST, the January number of which has just appeared. Mr. Shinn has many warm friends and admirers in this city who will be pleased to learn that he is adding in this manner to the public knowledge from the stores of a highly cultivated mind.—*Evening Tribune*, Oakland.

CALIFORNIA HORTICULTURIST.—The January number of this popular magazine is issued, with a table of contents rich in matters of interest to those engaged in flower and fruit culture. There is, in particular, a contribution from E. J. Hooper, of this city, concerning a remarkable specimen of *Darlingtonia*, or Pitcher Plant, found on Black Hawk Creek, Sierra County. The writer claims it as a new species, and the publishers have thought the discovery of sufficient importance to print a colored cut of the flower as a frontispiece.—*San Francisco Call*.

At hand is the January number of the "California Horticulturist and Floral Magazine," and from which we copy the article written by Dr. Anderson, and found in our columns to-day. Chas. H. Shinn, of Niles, wields the editorial pen.—*Santa Cruz Sentinel*.

THE CALIFORNIA HORTICULTURIST.—We are pleased to see that Mr. Charles H. Shinn has become the editor of the above magazine. He is a generous-hearted man, and a horticulturist by nature, education and practice.—*Rural New Yorker*.

CALIFORNIA HORTICULTURIST.—Mr. Chas. H. Shinn, of Niles, assumes the editor's chair with the January number of the "California Horticulturist," and the improved tone of its pages bespeak for it a prosperous future. A cut of the *Darlingtonia Californica* is given, and reference made by E. J. Hooper of a possibly new species. Prof. E. W. Hilgard discourses on floriculture and the study of botany; Jennie C. Carr writes charmingly of wild gardens, and W. C. L. Drew of Lily culture; while other very interesting contributions grace its pages. We trust the efforts of its talented editor to please will be appreciated.—*Petaluma Argus*.

THE CALIFORNIA HORTICULTURIST AND FLORAL MAGAZINE for January is an unusually vigorous and interesting number, which does credit to the new editorial management of Mr. Shinn. There is not a rural household in the State that would not find its profit in taking and reading this monthly, so replete with information and suggestions touching rural interests, in their economical as well as in their æsthetic relations.—*Contra Costa Gazette*.

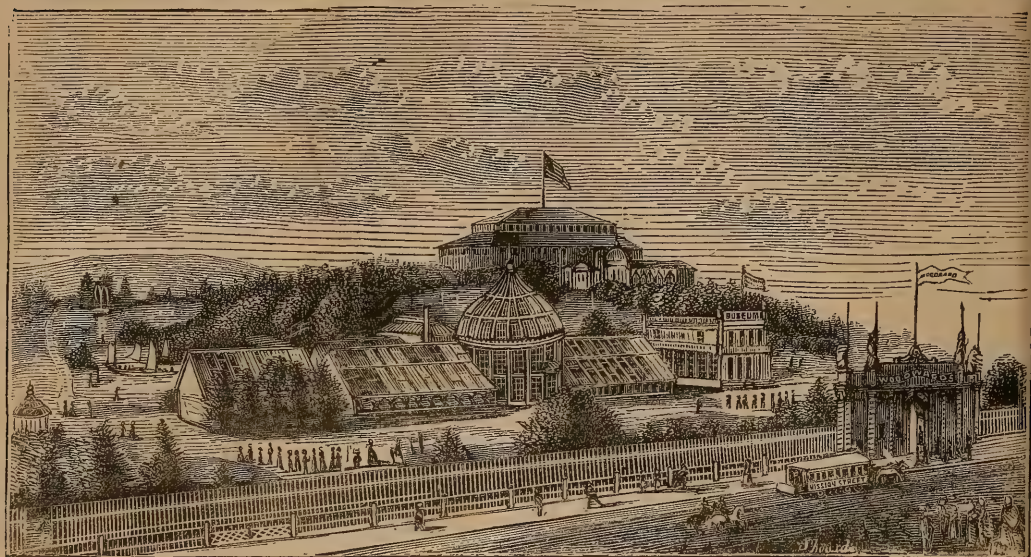
CALIFORNIA HORTICULTURIST.—No. 1, Vol. 9, for January, of this well known magazine has made its appearance on our table. It is now under the editorial management of Mr. Chas. H. Shinn, well known in this community as a gentleman and a scholar, and the number before us shows him to be thoroughly posted in the work he has undertaken. No one engaged or interested in horticulture or floriculture should be without this monthly, the subscription price of which is only \$2.50 per annum, or 25 c. for a single number.—*Redding Independent*, Shasta Co.

The CALIFORNIA HORTICULTURIST, which has been published for the past eight years, makes an announcement of a change in its editorial management. Mr. E. J. Hooper, who has labored long and earnestly to make the work interesting and useful, retires from the editorial chair, yet will remain to give it his influence and aid. Charles H. Shinn, Esq., so long known as an excellent writer on horticultural topics, and long a valuable correspondent, assumes the editorial chair, and will aim to make it more interesting and valuable, and to enlarge its usefulness by enlarging the magazine and adding to it some new departments.—*California Farmer*.

The CALIFORNIA HORTICULTURIST, a monthly publication of John H. Carmany & Co., San Francisco, is now under the editorial charge of Charles H. Shinn, of Niles. Mr. Shinn at one time taught school in Monterey county. He is a writer of ability, and, thoroughly understanding the field which the "Horticulturist" occupies, will no doubt make it a success.—*Watsonville Pajaronian*.

We welcome to our exchange list the CALIFORNIA HORTICULTURIST AND FLORAL MAGAZINE, published by John H. Carmany & Co., San Francisco, and edited by Charles H. Shinn, of Niles, Alameda County. Mr. Shinn is an able, industrious writer, and is doing good work in the department of horticulture in this State. Every person who has a farm or garden ought to subscribe for the magazine.—*Salinas Index*.

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Vol. IX.

MARCH, 1879.

No. 3.

THE

INV. 1898

California Horticulturalist

AND

Floral Magazine.

"Men come to build stately sooner than to garden finely, as if gardening were the greater perfection."

—LORD BACON'S ESSAYS.

CHARLES H. SHINN, — — EDITOR.

POST OFFICE ADDRESS—NILES, CAL.

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THE CALIFORNIA HORTICULTURIST

..... AND

FLORAL MAGAZINE,

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.... AND TO

Landscape, Ornamental and Market Gardening.

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THE

California Horticulturist

AND

FLORAL MAGAZINE.

VOL. IX.

SAN FRANCISCO, MARCH, 1879.

No. 3.

Contributed Articles.

HOW WE CAME TO HAVE AN ORCHARD.

By DR. J. W. GALLY, Watsonville.

"Geard-lant" is a combination of Saxon and Celtic words. "Geard" is Saxon for "a measure." "Lant" is Celtic for "land." Hence we have a compound word which means "a measure of land"—or, as we more beautifully say in America, also quoting from Shakspeare, "a patch of ground." Hence the western American calls his garden—or geard-lant—his "truck patch." Why it should be "truck" is not clear. "Truck" may, however, in some haziness of complexity, be derived from the French "troc"—small trade, or peddling. Hence the garden of an American farmer, when compared with his other fields—or patches—becomes his peddling grounds—that is to say, his "truck patch." But the word "geard," in moving down the ages, among the other words in the lingual glacier which has dumped out to us the English language, has been worn into the word "yard." Hence a "front yard," a "door yard," "a back yard," etc. The word "yard" is a portion of the name "orchard"—that is to say "wort-yard," or "ort-yard," meaning

thereby a patch of herbs, or of simples.

Our earliest ancestors in the British Islands were what their Yankee posterity would call a "thriffliss set," and did not seek to nourish themselves with fruits, berries, nuts, and vegetables to any great extent. In those days drug stores were not known, and people depended upon the ort-yard for their medicines, when charms and mummeries failed to kill the patient who got well "in spite of the Devil."

Shakspeare's apothecary, in Romeo and Juliet, although located in the Mantua of the poet's geography, was doubtless the keeper of such a "drug store" as the great bard had seen. Romeo, in the extremity of his love, says, reflectively,

"I do remember an apothecary,"

(Alas! who that was ever sick *failed* to remember the apothecary?)

"And hereabouts he dwells, which late I noted
In tattered weeds,"

(Tattered *weeds* are played out now!)

"with overwhelming brows,
Culling of simples; meagre were his looks,
Sharp misery had worn him to the bones:
And in his needy shop a tortoise hung,
An alligator stuffed, and other skins
Of ill-shaped fishes;"

(A sort of Woodward's Garden, in fact!)

"and about his shelves

A beggarly account of empty boxes,

Green earthen pots, bladders, and musty seeds,
Remnants of packthread, and old cakes of roses,
Were thinly scattered to make up a show."

This is the sort of fellow who used to sell the products of an ancient ort-yard.

In course of time our ancestors began to brush up a little, and, little by little, to plant the seeds of trees in the "geard" until, as the trees grew, the "geard" or "gearden," or "ort-yard," yielded apples, pears, cherries, etc. Finding that he had a profitable patch called an ort-yard our ancestor, with true English instinct, proceeded to add the letter "H" and called it a "hort-yard;" then by usage he shortened the word to "horchard," but then again with true British sagacity he no sooner found the letter "H" properly belonging to the name than he instantly dropped it, like a hot potato, and called the patch an "orchard."

That's how we come to have an orchard on our farm. And don't you forget it.

CRASSULA PERFOLIATA.

By W. A. PRYAL, North Temescal, Cal.

In California this plant is not as well known as it should be. It is a window or greenhouse succulent, and if properly treated will yield a profusion of blossoms in the latter part of November, and continue to do so till the first of January. Even at this date it does not completely discontinue to open its small white star-like flowers, but sometimes spring has fairly opened before its last raceme has faded away.

The flowers are borne in large clusters, very often as many as ten or twelve of them will be on one stalk, and we have had, this winter, on three year-old plants, no less than two dozen of these stalks.

In some of the European countries, where much taste is displayed in deco-

rating, the flowers are employed in embellishing rooms, in making bouquets and wreaths, for all of which they are found to be well adapted, as its flowers remain fresh a long time.

No trouble will be experienced when the proper soil is used, to have a pleasing display of hanging baskets and pots placed on brackets or shelves containing one or more *crassulas* with their branches falling over the sides, which will in a couple of years completely hide the pot.

This truly valuable plant should not be left out of our amateur collection of window plants, for its culture is easy, and it will grow in any position where there is an exposure to the sun. The profusion of flowers will well repay the little time bestowed in keeping them watered. The best results are obtained by giving them a full southern exposure, for they will not bloom satisfactorily in any other situation.

When blooming season approaches water should be given sparingly, but in no case let them suffer for the want of it. By having the plants "root bound" they yield a greater profusion of flowers. For plants three years old from cuttings a seven or eight inch pot will be large enough. One year old plants grow and bloom in three or four inch pots.

When planted in any other soil than that containing much sand the roots seem to decay and the plants rarely grow, and send forth few or no flower stalks. A soil that will grow healthy Fuchsias, Heliotropes, or, in fact, any good potting soil with the addition of about one-fourth of beach sand, is the best for this succulent.

At the close of the flowering season all faded shoots should be cut away, trim the plants into good shape, and, if necessary, repot with fresh earth.

Should they be too much root-bound shift into a larger size pot. After this change give but little water till they are started into new growth, after this no fear may be had of giving them the usual amount.

If the plants have been kept through winter in the house, bay window, or in a greenhouse, they may be placed in the open air during spring and summer, though in no case turn them out of the pot into the open border.

SHADE TREES FOR STREET PLANTING.

By JOHN ELLIS, University of California.

The question has been often asked, "what trees shall we plant for shade in our towns and cities?" In the first place, deciduous trees should be used for this purpose, for the reason that in winter such trees drop their leaves, and admit the sun's rays at a season when it is found decidedly agreeable. There can be nothing more agreeable to man and the lower animals than shade from the heat of a hot sun.

But do not let us make the gross mistake of planting shade trees where they are not required. Immediately about the bay of San Francisco such trees certainly are little required, but passing over the Coast Range we get into a very different climate and where the shade of trees becomes very desirable. In such situations we call attention to some species well worthy the notice of those who desire shade.

We would also here call the attention of parties contemplating the planting of town sites to this one point—the beauty of effect. This we think is most effectually achieved by planting one street line with one species of tree alone, and its intersecting street with trees of another species. To illustrate, take the American white elm for one

side of a street, and the red elm for the other side of the same street, and for the street forming a right angle to the latter, take two varieties of maple. As the town increases in size, these prolonged lines of trees should be planted with the same species of trees as they were commenced with; then a topographical view will demonstrate the beauty of the theory suggested. Indiscriminate planting looks badly, gives streets a ragged look, and often fails to give the shade required. How often it is found that the property of an individual possessing fine shade will readily sell for more money than his neighbor's who has neglected this feature, though both living on the same street. We think that this system of beautifying our cities should be introduced by our municipal government, and by its authorities directed and controlled wherever the climate demands it.

The following is a list of trees which are well adapted for shade and street planting:

The American White Elm (*Ulmus Americana*), 70 to 80 feet high; the Red or Slippery Elm (*Ulmus fulva*), 50 to 60 feet high; the Wahoo Elm (*Ulmus alata*), 50 to 60 feet high—rapid grower; the European Elm (*Ulmus campestris*), 60 to 70 feet high—upright; the Kidbrook Elm (*Ulmus virens*), 50 to 60 feet high—almost evergreen; the Narrow-leaved Elm (*Ulmus viminalis*), 50 to 60 feet high—something like birch; the Cork-barked Elm (*Ulmus suberosa*), 50 to 60 feet high—grows finely in any soil; the Scotch or Wych Elm (*Ulmus Montana*), 60 to 70 feet high—plentiful in California. The Black Walnut (*Juglans nigra*), 60 to 70 feet high. The Mulberry tree (*Morus rubra*)—this variety forms a large tree. The Maple tree (*Acer rubrum*), 50 to 60 feet high; the Sugar Maple (*Acer sacchari-*

num), 50 to 60 feet high; the White Maple (*Acer eriocarpum*), 50 to 60 feet high—often confounded with the red; the California Maple (*Acer macrophyllum*), 60 to 70 feet high; the Norway Maple (*platanoides*), 50 to 60 feet high; the Sycamore tree (*Acer pseudo plan-tanus*), 60 to 70 feet high; the False Maple (*Negundo fraxinifolium*), 60 to 70 feet high—rapid grower. The American Bass-wood (*Tilia Americana*); the White Lime (*Tilia alba*); the Downy Lime (*Tilia pubescens*); and the European Lime (*Tilia Europœa*).

The *Pawlonia imperialis*, like the *Ailanthus*, comes from the Flowery Kingdom. Some of the leaves have been grown two feet in diameter, but generally in shape they resemble the leaves of large sun-flowers.

The *Catalpa* produces large leaves, and flowers resembling the Horse-chestnut. It seldom takes a symmetrical form, but its round rather loose head and large leaves render it a desirable shade tree.

There are other varieties of European trees which are very pretty, but they are better adapted for lawns than for street shade trees, being of much smaller habit. There are also many other trees that we have seen planted in California for shade on streets, but we can not recommend them.

HOW SHALL WE HAVE A HORTICULTURAL SOCIETY?

By G. HOWATT, Diamond Springs, Cal.

The January *HORTICULTURIST* contained an editorial entitled: "Wanted, a Horticultural Society." This is the first intimation I have had that there was no Horticultural Society in San Francisco. Her citizens have reason to be proud of her energy and perseverance, and of many past victories, but their lustre is certainly dimmed by their lack of hor-

ticultural taste. There is wealth displayed in diamonds and rubies, in costly palaces, and in expensive habits, but there is not money to support a Horticultural Society!

If we had an energetic Horticultural Society we should soon be able to give a far better display of cut flowers, and plants, than was exhibited at either the last Mechanics' Fair, or the State Fair at Sacramento. Both these displays were lacking in some essential points. The pots appeared soiled, and the plants not particularly well grown. Besides, there was too much of the look of a market-garden about the Sacramento Fair, with the piles of vegetables in the same room. A good Horticultural Society could bring out a magnificent display—one far superior to any before shown on this coast.

A Horticultural Society creates an honorable competition, not for the few paltry dollars of a prize, but for the glory of being the best man, or woman, in each one's special branch of horticulture. What has made England the floral garden of the world? Echo answers, her Horticultural Societies. Each village, town, and city in England seems to have its own little Horticultural arrangement. There are Rose shows, Lily shows, Chrysanthemum shows, and others too numerous to mention.

San Francisco is the "Golden Gate City." Let us make it the "Floral City" of the Pacific, for there is the proper place for a Horticultural Society. This will also reflect credit on us all, individually and collectively, both at home and abroad. We boast of our fine climate, and rich soil; now let us exhibit our fine plants, and show our taste in decoration.

I wish people would think more of having nice gardens, and well-grown

plants, for an interest in flowers is healthier than medicine, and better than an M. D.'s advice. We feel tired of our usual vocations sometimes, and the brain requires a rest quite as much as the body. Busy and hard-working people will find the study of nature full of interest. We ought to have dozens of amateurs to help, and the professional florists ought to come in. Then, too, some of the leading papers of San Francisco and of the interior ought to advocate a Horticultural Society. I will cite a case which was personally known to me: The city of Paterson, New Jersey, has a population of over 50,000. At the time of which I speak, it had only one commercial greenhouse. Another florist began to build large greenhouses, thinking that, from the size of the city, he could make a living. A commercial traveler, who came along while this florist was beginning work, told him that it was money thrown away, adding that nursery agents usually went around and examined the private gardens in any city in which they expected to do business, noticing particularly how the grounds were laid out, how planted, and the general surroundings. From this he could well judge of the probable market for trees and plants. "Paterson," said he, "displays less taste than any other city, except that of San Francisco, which I have visited."

Now let us see what the well-directed efforts of one man did for Paterson. Mr. A. Derrom offered \$200 in gold coin, in various prizes, for the best kept cottage garden. The papers of Paterson supported Mr. D. most heartily, and printed many articles, letters, and instructions. To-day Paterson may be called a city of gardens.—[This system of giving prizes for the best cottage gardens has long been in use in

England, and has been of incalculable value.—ED. HORT.]

If we have any such man, or men, in our midst, we hope they will start it at once. Don't wait until you are dead, and leave it in your will, perhaps to be contested, but do the work *now* and enjoy the blessing of all blessings—that of helping your fellow man. I feel convinced there are such men; all they want is the asking, and that which is not worth asking for is not worth having. Now that the CALIFORNIA HORTICULTURIST has started the ball in motion, we hope you will keep it up vigorously, and get your brother editors to assist you. In this way we can accomplish this needed work, and in the end have a good, earnest, successful Horticultural Society.

LIST OF PLANTS

Collected by MRS. C. P. BINGHAM, in the vicinity of Santa Barbara, Cal., during the year 1878.

- Arabis perfoliata*—Lam.
- Arabis Holboellii*—Hornem.
- Adenostoma fasciculatum*—Hook. and Arn.
- Apium graveolens*—Linn.
- Apiastrum angustifolium*—Nutt.
- Aster Menziesii*—Lindl.
- Aster Chamissonis*—Gray.
- Anaphalis margaritacea*—Benth.
- Achillea Millefolium*—Linn.
- Anthemis Cotula*—Linn.
- Artemisia Californica*—Less.
- Anagallis arvensis*—Linn.
- Amsinckia echinata*—Gray.
- Amsinckia intermedia*—Fischer and Meyer.
- Amsinckia lycopsoidea*—Lehm.
- Antirrhinum strictum*—Gray.
- Audibertia grandiflora*—Benth.
- Audibertia Palmeri*—Gray.
- Audibertia nivea*—Benth.
- Audibertia polystachya*—Benth.
- Brassica campestris*—Linn.

- Bigelovii Menziesii*—Gray.
Bidens pilosa—Linn.
Baeria chrysostoma—Fischer and Meyer
Bahia artemisiaefolia—Less.
Bahia confertiflora—D. C.
Clematis ligusticifolia—Nutt.
Capsella Bursa-pastoris—Möench.
Calandrinia Menziesii—Hook.
Claytonia perfoliata—Donn.
 var. parviflora.
Ceanothus thyrsiflorus—Eschscholtz.
Ceanothus spinosus—Nutt.
Ceanothus cuneatus—Nutt.
Cotyledon laxa—Benth. and Hook.
Clarkia elegans—Dougl.
Caucalis microcarpa—Hook. and Arn.
Corethrogyne filaginifolia—Nutt.
Cotula coronopifolia—Linn.
Cnicus occidentalis—Gray.
Centauria Melitensis—Linn.
Convolvulus occidentalis—Gray.
Convolvulus luteolus—Gray.
Cuscuta subinclusa—Durand and Hilgard.
Collinsia bicolor—Benth.
Castilleja miniata—Dougl.
Cherogalum pomeridianum.
Cardamine paucisecta—Benth.
Cordylanthus pilosus—Gray.
Delphinium Californicum—Torrey and Gray.
Delphinium trolifolium—Gray.
Dicentra chrysantha—Hook. and Arn.
Datura meteloides—D. C.
Daucus pusillus—Michx.
Erodium cicutarium—L. Her.
Erodium moschatum—L. Her.
Epilobium coloratum—Muhl.
Eulobus Californicus—Nutt.
Erigeron Breweri—Gray.
Erigeron Philadelphicum—Linn.
Erigeron strigosus—Muhl.
Encelia Californica—Nutt.
Erythraea venusta—Gray.
Ellisia crysanthemifolia—Benth.
Emmenanthe penduliflora—Benth.
Eretrichium Californicum—D. C.
Eretrichium leiocarpum—Watson.
Eretrichium muricatum—A. D. C.
Eretrichium angustifolium—Torr.
Eriaganum pomeridianum.
Epipactis gigantea.
Eschscholtzia Californica—Cham.
 var. Douglasii—Gray.
Frankenia grandifolia—Cham. and Schlecht.
Filago Californica—Nutt.
Franseria bipinnatifida—Less.
Geranium Carolinianum—Linn.
Godetia purpurea—Watson.
Godetia lepida—Lindl.
Godetia quadrivulnera—Spach.
Godetia amoena—Lilja.
Godetia epilobroides—Watson.
Galium Aparine—Linn.
Galium Bloomeri—Gray.
Galium multiflorum—Kellogg.
Gnaphalium decurrens—Ives.
Gnaphalium Sprengelii—Hook. and Arn.
Gnaphalium ramosissimum—Nutt.
Gnaphalium purpureum—Linn.
Gilia dianthoides—Endl.
Gilia androsacea—Stendel.
Gilia Californica—Benth.
Gilia cotulaefolia—Stendel.
Gilia atractylroides—Stendel.
Gilia achilleaefolia—Benth.
Gilia multicaulis—Benth.
Gilia inconspicua—Dougl.
Hosackia grandiflora—Benth.
Hosackia strigosa—Nutt.
Hosackia subpinnata—Torr. and Gray.
Hosackia glabra—Torrey.
Hosackia prostrata—Nutt.
Hosackia micrantha—Nutt.
Horkelia Californica—Cham. and Schlecht.
Heteromeles arbutifolia—Roemer.
Heteropheca grandiflora—Nutt.
Heteropheca floribunda—Benth.
Hemizonia fasciculata—Torr. and Gray
Heliotropium Curassavicum—Linn.
Jaumea carnosa—Gray.
Lepidium nitidum.

- Lepigonum macrothecum*—Fischer and Meyer.
Lepigonum medium—Fries.
Lupinus Douglasii—Agardh.
Lupinus polyphyllus—Lindl.
Lupinus rivularis—Dougl.
Lupinus lepidus—Dougl.
Lupinus truneatus—Nutt.
Lupinus hirsutissimus—Benth.
Lathyrus vestitus—Nutt.
Lythrum alatum—Pursh.
Lymphoricarpus racemosus—Michx.
Laya elegans—Torr. and Gray.
Laya platyglossa—Gray.
Lycopersicum esculentum—Mill.
Linaria Canadensis—Dum.
Lilium Bloomeria.
Lisymbrium canescens—Nutt.
Lathyrus venosus—Muhl.
Malva borealis—Wallman.
Melilotus parviflora—Desf.
Medicago sativa—Linn.
Medicago denticulata—Willd.
Mentzelia micrantha—Torr. and Gray.
Megarrhiza Californica—Torr.
Madia elegans—Don.
Madia sativa—Molina.
Matricaria discoidea—D. C.
Microseris linearifolia—Gray.
Malacothrix tenuifolia—Torr. and Gray.
Mimulus glutinosus—Wendland.
Mimulus cardinalis—Dougl.
Mimulus luteus—Linn.
Mimulus inconspicuus—Gray.
Monardella lanceolata—Gray.
Marrubium vulgare—Linn.
Mirabilis Californica.
Nasturtium sinuatum—Nutt.
Nasturtium officinale—R. Br.
Nemophila aurita—Lindl.
Nemophila Menziesii—Hook. and Arn.
Nicotiana Bigelovii—Watson.
Orthocarpus purpurascens—Benth.
Orthocarpus erianthus—Benth.
Orthocarpus faucibarbus—Gray.
Orthocarpus gracilis—Benth.
Oxalis corniculata—Linn.
Oenothera cheiranthifolia—Hornemann.
Oenothera bistorta—Nutt.
Oenothera micrantha—Hornemann.
Oenothera strigulosa—Torr. and Gray.
Oenothera Californica—Watson.
Psoralea macrostachya—D. C.
Potentilla glandulosa—Lindl.
Psilocarphus tenellus—Nutt.
Perezia microcephala—Gray.
Phacelia circinata—Jacq.
Phacelia tanacetifolia—Benth.
Phacelia ramosissima—Dougl.
 var. *hirfida*—Gray.
Phacelia ciliata—Benth.
Phacelia viscida—Torr.
Phacelia grandifolia—Gray.
Physalis aequata—Jacq.
Penstemon cordifolius—Benth.
Plantago major—Linn.
Plantago lanceolata—Linn.
Plantago maritima—Linn.
Plantago Virginica—Linn.
Pterospegia drymarioides.
Portulaca oleracea—Linn.
Pæonia Brownii—Dougl.
Rhamnus crocea—Nutt.
Rhamnus Californica—Eschscholtz.
Rhamnus Purshiana—D. C.
Rhus diversiloba—Torr. and Gray.
Rhus integrifolia—Benth. and Hook.
Rhus laurina—Nutt.
Rubus leucodermis—Dougl.
Rosa Californica—Cham. and Schlecht.
Ribes speciosum—Pursh.
Ribes Menziesii—Pursh.
Ribes viscosissimum—Pursh.
Rafinesquia Californica—Nutt.
Ranunculus Californicus—Benth.
Streptanthus flavescens—Hook.
Silene Gallica—Linn.
Silene pectinata—Watson.
Silene laciniata—Car.
Stellaria media—Linn.
Stellaria nitens—Nutt.
Sidalcea malvaeflora—Gray.
Sanicula arctoides—Hook. and Arn.
Sanicula Menziesii—Hook. and Arn.

Sium cicutæfolium—Gmelin.
Sambucus glauca—Nutt.
Solidago Californica—Nutt.
Solidago elongata—Nutt.
Soliva daucifolia—Nutt.
Stephanomeria paniculata.
Sonchas oleraceus—Linn.
Sonchas asper—Willars.
Specularia biflora—Gray.
Soranium nigrum—Linn.
Soranium Xanti—Gray.
Solanum umbelliferum—Eschscholtz.
Schrophularia Californica—Cham.
Salvia Columbariæ—Benth.
Scutellaria tuberosa—Benth.
Stachys albens—Gray.
Stachys bullata—Benth.
Thalictrum Fendleri—Engelm.
Thelypodium laciniatum—Endl.
Thysanocarpus curvipes—Hook.
Thysanocarpus laciniatus—Nutt.
Thysanocarpus radians—Benth.
Trifolium ciliatum—Nutt.
Trifolium gracilentum—Torr. and Gray.
Trifolium bifidum—Gray.
Trifolium tridentatum—Lindl.
 var. *obtusiflorum*—Watson.
Trifolium microdon—Hook. and Arn.
Trifolium microcephalum—Pursh.
Trifolium fucatum—Lindl.
Trifolium amplexens—Torr. and Gray.
Troximon Chilense—Gray.
Trichostema lanatum—Benth.
Tillaea minime—Miers.
Venegasia carpesioides—D. C.
Verbena officinalis—Linn.
Vicia Americana—Muhl.
 var. *truncata*—Brewer.
 var. *exigua*—Nutt.
 var. *sativa*—Linn.
 var. *Californicus*—Watson.
Zanschneria Californica—Presl.

[This list may prove of more value to the botanist than to the general reader, but it is well worth preserving in a permanent form, as an example of rare industry.—ED. HORTICULTURIST.]

FLOWERS AND FRUIT.

By JOHN TAYLOR, Tuolumne County, Cal.

Fruit and flowers are the highest conceptions of man in the realm of beauty and use. Flora and Pomona have held the first seat in man's affections since his creation, and the planting of Eden's garden. Nature has not retrograded in beauty or abundance. Flowers bloom more lovely, fruit tastes sweeter to-day than ever before. Man, by science and industry, has made the very wilderness to bloom in beauty, and rejoice in use. The fairest of flowers bloom unseen, living and dying for generations, until the zeal of the botanist transplants it, for manipulation into a higher type. What a beautiful relationship exists between these buds and blossoms of the forest and field, and man so full of aspirations, life, and thought! We have the noxious weed, the fragrant flowers, the bitter fruit, and the luscious berry. All grades of flowers and fruit are manifest to eyes and sense. Is it not so in the realm of thought and action of man? How beautiful and fragrant is the life of the good and true, whose every thought bespeaks a flower transplanted to the garden.

To the botanist all flowers have some beauty. The very nettle is now being cultivated through the efforts of science. This is a lesson to teach us that there are some beautiful points in the most angular structure of humanity, and that, by cultivation, they may be prepared for the higher gardens of "love and wisdom." What a grand garden is humanity, and what a noble occupation it is to be a worker in this many-hued nursery. The man who produces a beautiful flower by cultivation, plants the seed of progress for man's pleasure and higher spiritual attainments. Like music, whose vibrations charm the ear and warm the heart, flowers have a

fadeless influence in the soul, which will ultimately produce a fruit "seen and known of all men."

It is singular that our most beautiful flowers spring from the mud. The violet's hue would denote a parentage in fields strewn with rich and rare exotics, but the slime of mud is its natural birthplace. How true this is of the great and good of men. The gentle Nazarene was born in a manger, seemingly at variance with the predictions of prophets, or expectations of men.

If there is one occupation which I love, it is the cultivation of fruits and flowers. It fosters good thoughts and actions. It feeds the sense of sight and develops the soul, and gives the body good health. There are corners enough in humanity's garden, for the employment of all philanthropists, and those who would plant a flower where now only the thistle grows.

THOUGHTS IN THE SNOW.

By JOHN MAVITY, St. Helena, Cal.

In no season of the year on our coast can we appreciate the beauties of nature's handiwork so much as in the mountains in midwinter. On the morning of Jan. 28th we found ourselves on the summit of Howell Mountain, 1,600 feet above tide-water, among the deciduous oak, the stately pine and fir, with many other kinds of distinctive and peculiarly striking features. These trees can never be so well appreciated as when a crisp carpet of snow covers the ground, and there is just cold enough to make one's cheeks ruddy, and give elasticity to our steps. As for evergreens, winter, in such a locality, is their grand festival time. In our Eastern homes, we planted them mainly for winter; we had green enough in summer. It was not so much that they were always green, but that they fur-

nished color for nature's winter scenes. But the varying forms of the evergreen, as seen in the pine, the fir, the cypress, box or yew, are not the only sources of winter garden pleasures.

To us there is nothing more beautiful and charming in nature than trees, when bending under the weight of a light snow, or their foliage covered with frost crystals which glimmer and sparkle like diamonds in the bright sun. It is a pleasure then to view and study their various forms and attitudes. Our very being is filled with delight and gratitude to the Great Architect who planned it all. We feel sure that those who have a love for the beautiful phases of each of the seasons, will find much to enjoy at this season of the year. We should note well the various features we see everywhere about us, and when the buzz of humming birds and opening flowers announce the coming spring, and fairer weather, we should plant to produce the best effects for another season.

One of the greatest pleasures of gardening is the creation of beauty. Fragrant flowers and handsome trees are ever a delight. We may walk through the wild woods of mountain or valley and have trees and flowers along our journey; but it is the artistic combination of these, producing effects never seen in nature, that gives the grace to gardening, and makes it really an art. To plant for shade, or to screen disagreeable objects, or to break strong wind-currents, is one thing; but to plant so that our very being will thrill with delight every time we look upon the lovely scene, is quite another. This is an art that should be studied more by our people. A little study of the art of combination and effect, and the result of our labor is a delight to the eye.

We plant too many evergreens, and not enough deciduous trees. We generally plant in straight lines, and without any thought of combination, thus producing an air of disagreeable stiffness. This lack of taste in laying out grounds is more observable in country and village homes than in our larger cities. The skill of the professional gardener is often to be seen in our cities, producing charming effects.

May the love of the beautiful in nature and art grow and expand until it reaches every home in our beautiful land. It is to this end we would ourselves write, and also learn from the pens of others, of the beautiful art of combination and effect in gardening. What trees we shall plant; what species harmonize well in size or character of foliage; what flowers add to each other's loveliness—these are questions which are of endless interest.

VASES FOR FLOWERS.

By "A NEW CONTRIBUTOR."

In arranging cut flowers for the house, the effect produced depends very much upon the vase used. Some vases are so intrinsically lacking in grace of form, or so utterly ruined by inappropriate pictures placed on them by way of ornament, that it seems almost profanation to put into them nature's fair handiwork, the pure and perfect flowers. As a general rule, I think a pure white, or colorless, glass vase is the best. It seems to me while beauty of form is essential in a vessel intended to hold the most beautiful of nature's productions, that an attempt at ornamentation in the way of pictures is almost an impertinence, as bringing man's handiwork in too close contrast with nature's. We all of us can, I have no doubt, remember vases which have for this very reason become an actual pain to us. On the

other hand, we never weary of a pure, simple, white vase of graceful form, crowned to-day with a wreath of rosebuds with their shining green leaves, and glowing petals, which are, after awhile, replaced by a handful of ferns, having imbedded among their graceful fronds some blue larkspur, or lobelia, or, in winter, a handful of scarlet berries of the Madrona. The peculiar advantage of a simple vase is that we are not obliged to consider its form and color as additional factors in the problem.

A vase with a tazza and trumpet has many recommendations, and it is possible to produce some very pretty effects with it, but I have never seen any that I thought quite perfect. The lower part is too shallow, holding so little water that flowers do not keep well in it, and wither far too soon, while the upper part rises too far above the saucer, so that it is not easy to so arrange the flowers as to blend the two parts in one harmonious whole. The only way to accomplish this, with those that I have seen, is to use drooping vines in the upper part, but, although that is pretty, one does not want to always repeat the same thing, or the same method of using flowers. If the lower part of the tazza were deeper, and the upper part not quite so tall, it would be much easier to blend the two, and a greater variety of effects would be possible.

There are some delicately tinted vases that are lovely, especially if used with discretion. For instance, we may have a delicate blue-tinted vase in which is placed a half-blown bud of Cloth of Gold Rose, surrounded with its own green leaves, or a cream-tinted vase crowned with double-blue Neapolitan Violets.

We have only opened this subject,

and invite further discussion from our lady friends, either on this topic, or on any other matter relating to home adornment, which is especially woman's sphere, because the necessary taste has been given to her in a larger degree than to man.

Correspondence.

[The editor of the CALIFORNIA HORTICULTURIST cordially invites all persons interested in any branch of horticulture to send practical questions and notes of their own successes and failures. A brief, unadorned statement of events in one little garden may often prove of universal interest. Short notes from busy people, all over the Coast, will make this Department fresh and valuable.]

ORANGES AND LEMONS IN THE FOOTHILLS ABOUT OAKLAND.

Having visited since the late severe weather some of the grounds where oranges, lemons and limes are grown, and having seen how the frost had affected them, we are satisfied that the foothills in this part of the county are well adapted to the growth of oranges and lemons.

At the many beautiful places on Oakland Heights, these trees were hardly affected by the cold; at Mountain View Cemetery, and also at Rockland Park, they suffered but little and their growth will not be in the least retarded. On the Temescal creek, from North Temescal east, oranges and lemons were not injured. Here they seemed to have stood it better than elsewhere. Even the buds were untouched. At Berkeley, where the climate is a little colder still, but little damage was done. Limes in all these places fared much worse than either of the other two trees. Other tender plants, such as heliotropes, salvias, cannas, abutilons, etc., stood the frost in the foothills much better than in the valley.

Frost at the University Grounds.—At this place we saw many fine plants,

badly ruined. The grounds are well sheltered, and the tenderest of plants and shrubs, except coleus, begonias, and the like, may be set out, and with some protection or cover being given them, they would stand any amount of our cold weather.

Early Potatoes.—About the first of last December we were shown, by the originator, some fine specimens of a new variety of potato. They were from volunteer vines that made a growth since the early rains in October, and in the short time of a few weeks, potatoes the size of hens' eggs formed under them. This variety promises to be of an early sort, and is a California seedling.

Yours respectfully,

W. A. PRYAL.

THE VALUE OF HILL-LAND.

EDITOR HORTICULTURIST — Sir: Only twenty miles from San Francisco there is an immense area of comparatively idle mountain land, with very many valuable spots, and also plenty of springs for irrigation. This land is now held at reasonable figures, and must certainly, as people begin to realize its value, exhibit a marked increase. The section I refer to is in the foothills of Alameda County, where the climate is much better than in the valley. Occasional fogs from the Pacific Ocean, in July, August, and September, render irrigation almost unnecessary. The valley lands are much more subject to frosts and cold winds, but portions of these hills may be selected where nearly everything can be successfully raised. At my home, which we call Ukraina, we have lettuce, radishes, strawberries, and raspberries in September, October, and November, without irrigation, and by Christmas time young beans, blooming squashes,

and most excellent Early Rose potatoes, which were planted on October 10th.

In California there is a large class of people who only "talk of making money." It seems as if some farmers of large ideas liked to have thousands of acres of land lying idle, or used merely for a cattle range. Here are tracts fit for many products, and where many poor people might build up an independent home and have country freedom, good air, good water, health and happiness. A. HONCHARENKO.

[We are acquainted with the section to which our correspondent alludes. There is, of course, little or no government land left, and the country is held in large tracts. It is, on the whole, a region which will improve. The time will inevitably come when the treeless hills from Oakland to Mission San Jose will be planted with Olives, Cork-oaks, Carobs, Catalpas, and Eucalypti. The warmer slopes and ravines will then be occupied by orchards, vineyards, and semi-tropical fruits. We shall, as our population increases, be forced to take a leaf from the experience of Europe, and utilize all our hill lands, for those products to which they are best adapted. We hope that our correspondents will often send us notes of the resources of different localities.—EDITOR.]

COAST PLANTING.

Some one from Santa Cruz Co., who chooses to remain hidden beneath the ambiguous title of "Sea-side," writes to find out what we know of the best time for planting near the ocean.

This is a subject which deserves careful study and experiment. Only a horticultural charlatan would recommend, in an off-hand way, this or that variety. The character of the soil, whether rocky, adobe, or sand, the height above the water, and the force

and direction of the winds, all have something to do with the problem. The Austrian pine, used elsewhere, is too slow a grower here; *Pinus pinaster* is much better, growing well, we believe, in the sandy beach. Of course, if the place is elevated, Monterey pine is the best. We hope "Sea-side" will write again.

OLIVES AND OLIVE CUTTINGS.

EDITOR HORTICULTURIST—Sir: I have lately examined the olive produce both of this county and of Alameda, and there is a full crop. For some years past I have made good oil, equal to that imported from France and Italy. This oil of mine has taken diplomas at the fairs.

I want the farmers to know that we have in California a good climate and good soil for the olive. The dry land near the foothills is the best. The farmers can have an orchard by planting cuttings from three to four feet long and one and one-half inches thick, in the ground where they are to remain. Plant them so deep that only a couple of buds remain out of ground. Irrigate until they grow, after which they require no more water. Dry soil is the best for good olives.

A nursery may be made by taking cuttings one-fourth of an inch in diameter, and one or two feet long. Plant these in rows, and wet them thoroughly. In two years they will be large enough to plant in the orchard. Some very fine trees may be seen at the Catholic priest's, Mission San Jose; also at Mr. E. L. Beard's, same place. They have a good and valuable variety, which is equal to the best French or Italian olives for oil. I have tried all the others and the Mission variety is as good as the best.

G. B. RUFFINO, San Jose.

DR. JOHN STRENTZEL, one of the pomological authorities of the State, writes from his home, Alhambra, near Martinez, and suggests that an article on the best methods of grafting and budding the orange and lemon would be quite in our line and would be widely welcome. "Now," he says, "that, after twenty years of talking, we find we can, despite this winter's frosty weather, raise 'Golden Apples,' let us substitute varieties of repute for seedlings, and this we shall do if we can teach people how easy it is to bud and graft the orange and the lemon." Articles, notes, postal cards, and other suggestions on this subject are now in order. We invite our friends of the southern counties to give us their views also.

BOTANICAL BOOKS.—J. A., Oakland, is employed in greenhouse, and he asks what work will prove the most complete manual of the plants around him. He wishes us to mention the best, and one that will last some years. If he can afford the expense, Paxton's Botanical Dictionary, which costs about twenty dollars, will never fail him. He must be sure to get the latest edition, with appendix. Another inquirer wants a good book on conifers, and we commend him to "Hooper's Book of Evergreens."

TOO MUCH PRUNING.

EDITOR HORTICULTURIST — Sir: Will you not try to correct the wretched taste of the working gardeners, who look after the little gardens surrounding some of the best houses in this city? I scarcely know a single garden where a tree or a shrub is allowed to grow as nature intended it. Every Monterey Cypress, every kind of Acacia, even rows of Eucalypti are clipped into a rounded or ovoid form. In all our pub-

lic squares, every tree, every evergreen shrub is thus mutilated. A San Francisco day laborer gardener, who is seeking work, carries with him as his only tool a pair of shears.

One cause, probably, of this vile system of clipping is, that on laying out the garden too many trees were planted for immediate effect. After a quick growth of the Cypress and Gum, the trees are forced to stand too thickly; then the clipper comes in with his shears, and we have our orthodox San Francisco tree, a model of what we possessed, as children, in our Noah's Ark.

There are trees that the knife should never touch; one is the Cypress, in fact I think the same may be said of all the coniferæ. Some species of Eucalypti grow very straggling, and, after a year or two, produce leaves only on their terminal branches. These require vigorous cutting back, but I do not know any tree or shrub to which a pair of shears can be properly applied. I have seen shrubs, such as the Laurestinus and the Veronica, which produce flowers from their terminal branches, kept from flowering the entire year by being clipped by the gardener into his classical shape.

Do what you can to induce our gardeners to leave our ornamental trees alone, and see which will do the best job—Nature or Shears?

Respectfully yours,
T. B.

FERN COLLECTORS.—Mr. W. T. Stratton, Petaluma, the genial editor of the *Floral Californian*, writes us that he is collecting the Ferns indigenous to this coast, and would be glad to open correspondence with any and all Fern-lovers. This makes it easy for us to say, as we have often thought, that it is much to have a carefully preserved and

named collection of dried ferns in the house, but it is also much, and possibly more, to have a host of living and beautiful ferns, all nicely labeled, growing in shady and moist nooks. There is a garden — well, somewhere; a rivulet flows and murmurs along one boundary, by shining pebbles, and over ledges of rock; willows, rushes, scarlet mimulus, and hosts of graceful ferns fringe the water's edge. Here the owner has each winter planted ferns which he found in the stately woods, or by secret mountain springs, or along the margins of other streams. So the banks of the winding rivulet are fast becoming a Fern garden.

QUESTIONS ABOUT THE DATE PALM.—

How old must the Date Palm be to produce fruit? Will a solitary tree bear, or does it need fertilizing from another tree?

GEO. RICH, Sacramento.

1. The age required for the Date Palm to produce fruit varies from ten to twenty years, according to soil, climate, treatment, and variety. The Date is essentially an African fruit, and needs the warmest locality which can be obtained. It is hardy in central and southern California. Last year a tree at Winter's, in Solano Co., produced fruit, but we think it failed to ripen. In date-growing countries, the tree is propagated by suckers which spring up around the base of old trees, and these suckers bear sooner than do trees grown from seeds. There are many varieties cultivated. A new Algerian variety, it is claimed, will ripen in September in the south of France.

2. The Date Palm is diceicious; that is, the stamens are on one tree and the pistils on another. The pollen is often carried long distances by the wind, but there must be a male tree somewhere within reach before the Palm will pro-

duce fruit. Arabian poetry is full of songs about the marriage of the Palm, and the Arabs sometimes carry the staminate blossoms for miles to shake them over the pistils of another tree.

THE GRAPE-VINE RASPBERRY SWINDLE.

—During the past month several correspondents have asked about the grape-vine raspberry which has been extensively advertised, and, we understand, sold in this State by one or two Eastern agents. It is an affair which is of the nature of the Utah Hybrid Cherry, the Blue Rose, the Winter Grapes which were to keep like apples, and various other rememberable swindles. The plant sold under this name is the *Rubus Nutkaensis*, which grows in great abundance near Nootka Sound. It is comparatively worthless; as a gift one, but certainly not more, might be accepted and planted as a curiosity. The public benefactor and ubiquitous agent has been selling them at one dollar a piece!

A PROMISED LETTER.—Mr. J. J. Jarman, of Yokohama, writes and promises an article on Japanese plants, concerning which he is so well informed. We Californians will be glad to know about the Japanese gardens and gardeners, their favorite trees, the nature of the soil, methods of cultivation, newer species of plants, lily culture, and a host of similar matters.

A FRIENDLY LETTER.—Mr. George Rich, of Sacramento, writes us a long letter expressive of his interest in our work. We have not room to print the whole. Mr. Rich is enthusiastic on the subject of a Horticultural Society, which he believes is entirely practicable, and should have been a permanent affair years ago. He feels certain

that our progressive and enterprising nurserymen, orchardists, gardeners, botanists, and amateurs will assist in this work. That is what the HORTICULTURIST thinks.

IN MY GARDEN.

A rose blooms by the garden wall,
Near crimson asters for the fall,
And, clust'ring close, a creeper hides
All of the cottage but the sides.

A waving lilac's sweet perfume
With fragrance floods the open room;
A mat of pinks beside the walk
Is guarded by a hollyhock.

A bed of lilies next I tell—
A valley-lily's drooping bell—
A tiger, with its gorgeous spots,
Shadowing sweet for-get-me-nots.

A tulip on its slender stem,
Like to a glowing warm-hued gem,
In varied colors gay arrayed,
Here by the breeze is gently swayed.

A stretch of grass that waves along
With murmured rustlings, as in song;
It falls and rises like the sea
In billows even, smooth, and free.

A branching, fragrant apple-tree,
With pink-stained petals strews the lea;
The robin-redbreasts flutter 'round
And fill the air with joyous sound.

A spreading locust near I see,
And 'neath this white-bloomed leafy tree,
A hundred little blossoms start
To flower and smile with golden heart—

And then, alas! to droop and fade;
Eise, by the sickle or the spade,
Unthought of be cut down and die,
Breathing their perfume like a sigh.

I contemplate my garden fair,
For it is lovely—all my own—
And think how strange the sun-fraught air
Has every moment brighter grown.

These silent flowers have taught to me
A blessed lesson of content,
And to the darkest hours that be,
A little grateful pleasure lent.

ROBIN HOOD.

The Greenhouse.

MARCH NOTES.

General hints.—A greenhouse, or conservatory, needs constant attention. There will be plants to trim, or repot, seeds to sow, and almost daily changes to make. The work of a day can not be exactly arranged beforehand, in greenhouse work. The owner comes in, pauses a moment here, to pick off a withered leaf, and a moment there to tie up a rambling branch. Plant-keeping is a sort of glorified house-keeping, and is, in like manner a round of small, but important, operations. We would, therefore, with all due emphasis, enunciate this fragment of advice. Walk about the greenhouse or conservatory, and visit everything before you fairly settle down to the work of the hour. Do what seems most important. Learn to be handy in your arrangements and swift in your motions; the light work of the greenhouse needs knowledge and tact, but it is never laborious.

Potting soils.—This is the subject which is a constant mystery and trouble to the amateur. The flower lovers of the city, for instance, are often at their wits' ends to obtain good reliable soil for potting. Of course it can be bought at the nurseries. But if a person will learn to mix up his own potting earth, he will, in due process of time, discover how to modify it for differing plants and circumstances. The country folks go into the hills and find leaf-mold, and piles of thoroughly rotted branches, and black, rich soil from the crevices of the rocks; they go to the borders of the nearest stream and take clean, fine sand; they use the loam of the fertile valleys, and manure from the cattle yard, which has been trampled into dust, and rotted under the influences of half a dozen winters. The city peo-

ple can not use these sources of supply; what, then, are they to do? The first resource is in street sweepings which contain pulverized manure, flakes of iron from wagon tires and horse-shoes, horn-dust from hoofs, soot from smoky manufactories, and countless substances of fertilizing value. Sifted street-sweepings must, therefore, be utilized. The fallen leaves, clippings of the lawn, refuse vegetables, etc., may be piled in a hollow in the yard, and covered with earth, leaving an opening in the top into which the soap suds from the house may be poured. It will not take many months to convert the entire mass into the richest of soil for mixing with street-sweepings and fine sand, for re-potting house plants.

Hard wooded greenhouse plants should be re-potted. It is better to do this now, while the atmosphere is damp, than to wait until later, because the longer we can wait before we have to moisten the soil in the pot the less likely the roots are to suffer. In re-potting there is always, notwithstanding the greatest care, some mutilation of roots. Moisten the ball of every plant, which has to be moved, several days before re-potting, so that the water can drain off. Pack the new earth solidly, or when water is given it will pass off too rapidly and leave the old ball dry, which will soon cause sickness or death of the unfortunate plant. In re-potting plants avoid placing them so high in the pots that there is difficulty in watering. Plants should be placed so low in the pot that it will hold enough water at one application to moisten the soil.

Insects on Orchids must be exterminated if possible. If Orchids are crowded together too closely, those worst of pests the white scale, the brown scale, and a third species with

brown centre and white edge, are apt to become numerous. Separate the clean plants from those infested. Orchids will not bear much washing with any insecticide, so we must use brush and sponge, but gently, so as not to injure the leaves. The small yellow thrip is apt to attack the points of the shoots of Denrobies, Odontoglossums, and similar Orchids, and if unmolested stops the extension of the bulb. Daily syringing will destroy this enemy. In Orchid culture one great point is to keep the pores of the leaves open and the whole plant clean by syringe and sponge.

Conservatories.—Indoor plants beginning to bloom, need a little weak liquid manure. Evergreen shrubs may safely be pruned. Stake plants in pots. Tie up the young shoots. Wash the moss-covered and slimy pots. Use no dirty pots in re-potting. Clean the surface soil. Keep up a good succession of Hyacinths, Tulips, and other bulbs. Sow Pansy seed in boxes for summer blooming in the garden. Sow Rhodanthes for summer decoration. Among the plants which should now be in bloom we mention Camellias, Heaths, Azaleas, Daphnes, Cyclamens, Primulas, Cinnerarias, Bouvardias, etc. Propagate plants from seeds, cuttings, or root-divisions, as soon as possible. Sow in boxes—Lobelias, Petunias, Amaranthuses, Stocks, Asters, Crimson-leaved Beet, and plants for the summer garden or decoration of the conservatory.

Stove plants.—Re-pot Alocasias, which like plenty of water. Start Clerodendrons. Cissus discolor needs cutting back, roots easily from cuttings, enjoys heat and moisture. Ixoras, Crotons, Dracænas, Pavettas, and tender Palms also like a moist, warm atmosphere. Keep Allamandas growing. *Æschy-*

nanthuses are good basket plants, and so are the Pitcher plants, *Pothos argyrea*, *Panicum variegatum*, etc.

Farm and Orchard.

NOTES FOR MARCH.

A busy month is this of March. If we stop to count up the matters of pressing importance we shall be quite wild over the list. The only sensible plan for the farmer is to take what lies nearest, and do it with all his might, making a complete finish of that piece of work before he attacks another. Commend us to the quiet man who knows exactly how much he can do without worry, and, having done his best, can sleep soundly, and be ready for another day's work. In this busy season it is essential that the young farmer shall obtain ample sleep. We, in California, must do the greater part of our studying and reading in the early summer and late autumn. We have here no winter rest, and no long weeks of comparative idleness. We can, if we will, so arrange our work as to have much time for mental development in the course of the year—but March must be dedicated to the cause of hard physical toil.

Alfalfa may be sowed in this month with better chance of success than if sowed earlier. In some parts of the State fall-sowed alfalfa is liable to be killed by the frosts, and it is difficult to get the ground in the best of order as early as December. For these reasons most farmers prefer March. The field chosen ought to be so situated that it can be irrigated several times during the season, or after each cutting. The ground must be as clean as possible, and must receive the most thorough preparation. It is a little difficult to get a good stand of alfalfa; clean, mel-

low soil, and light covering are essential. On light soils thirty pounds to the acre are required, but on heavy soils forty pounds will be needed. Care is needed, in the purchase of seed, to avoid the germs of the parasitic dodder-like plant which infests and destroys alfalfa. It is best to know where the seed has been raised, and whether from a healthy field.

The Orchard work is still pressing, in large orchards, though it should have been finished last month. If high winds have broken down evergreen trees, or split off large limbs, they should be cut off as cleanly as possible, and a little grafting wax put on the wound. A good way to prevent such accidents, which often ruin beautiful olive, orange, acacia, and other evergreen trees, is to begin when the tree is quite small, and train one of the smaller branches around the others like a hoop, letting it go past the point of starting, then turn upward.

Wired Labels on shrubs, roses, trees, etc., need attention. They are more easily observed when the leaves are off, and the growing season is now almost upon us. When plants or trees come from the nurseries, the labels will usually be found fastened on the leader, or central stem. Take them off, and fasten them to small stakes placed near each plant. Labels written in common lead pencil will last several years if the following precautions are observed: Place a square, inch stake near the tree. Tie the label on so that it will hang on the north side of the stake, and let the written side be next the stake. Labels covered with white lead, and written on while damp, are good for a long time. Zinc labels are still more permanent.

The best label, to use a seeming paradox, is no label at all. There ought to be a plan made showing in black and white the exact position of each and

every tree, shrub, and plant on the whole farm. This could be referred to in a moment, and there is less danger of error than if one depends entirely upon written labels on the trees.

The Weed Question is still important, for they keep coming up more times than an ardent politician with legislative aspirations, and they require even more positive subduing. The orchard must be kept clean, and also the garden. Particular attention must be paid to the weeds growing by roadsides, in lanes, or fence corners, or on the banks of ditches, or growing through piles of brush, or in any neglected corners. These are the trouble-breeders, and the source of many a future backache. A magnificent weed, growing in some neglected place is simply a magnificent evil, and it scatters its progeny in countless hosts. The great generals of history used to lay waste a strip of country between themselves and their enemies. In like manner the able agriculturist will carry the war into Africa, and lay waste the weed dominions along the roadside, and by ravines and neglected corners. It is not lost labor.

Plowing Orchards is mostly over with. It is a good plan to plow twice, once from the trees, then harrowing, and again, late, towards the trees. The weeds make a good growth before the second plowing, and are turned under as a fertilizer. One plowing is sufficient when, as the present season, the rains do not come until late. Good harrowing and cultivating are necessary in the orchard. Only the very best soil will stand the growth of fruit, and of vegetables or small fruits on the same ground. Where land is valuable, and squashes, beans, corn, potatoes, etc., are grown in the orchard, the use of manure or some fertilizer is absolutely necessary. Orchards in grass are not

usually a success here. We have seen a few healthy orchards on soils moist enough for grass to flourish and look green most of the year, and sometimes trees do well in an alfalfa field. But, as a rule, rather dry uplands, well cultivated, produce better fruit than the moist bottom lands.

Farm Experiments.—It is not wise for any farmer to conclude that everything he hears of elsewhere will be a success with him. It is easy to tell a story of wonderful crops, but the product which a man has tested and understands thoroughly is probably the safest for him to abide by. Nevertheless it is the part of a good farmer to test, with all due caution, the newer crops, or those new to his land. A man who tries something new should consider himself a committee of one, appointed by the force of circumstances, to make an ample report. If a farmer, for instance, concludes to plant a new kind of wheat, or a new sort of potatoes, he should devote a page, or more, of his note-book to an account of the matter. These, or something similar, might be suggestive headings: "Variety; date received; size, color, weight; preparation of the soil; time sowed; after treatment; notes on general appearance; yield; comparative quality." A record of this nature possesses a positive value, and is the sort of material which wise agricultural editors are most anxious to obtain.

SAYS Marshall P. Wilder: "I would rather be the man who shall originate a luscious fruit, suited to cultivation throughout our land, of which successive generations shall partake long after I shall be consigned to the bosom of mother earth, than to wear the crown of the proudest conqueror who has triumphed over his fellow men."

Garden and Lawn.

NOTES FOR MARCH.

Removing Plants must be done with care. It is sometimes an apparent necessity to change the relative distances, or reduce the number of plants in a bed. Often, in order to produce an immediate effect, we use three times the plants which will finally be needed on a given space. They grow larger and larger until there is no comfort or beauty in the struggling mass. We may then either cut out half of them, or trim heavily, and remove half to an empty bed. Dig around the plant to be removed, leaving a block of earth a foot square next to the stem of the plant. Dig down about two feet leaving this block of earth standing. Trim the upper corners off with a sharp spade or knife, and, in fact, work off all the earth which can be removed without causing the block to crumble. If the soil is sufficiently tenacious have a wheelbarrow ready, cut under the block, lift it on carefully, wheel it to the desired spot, where a hole should have been previously prepared, and let it slip in gently, setting the soil around to fill the crevices. If the soil does not hold together well, an old sack must be wrapped around and tied underneath, tip the block of earth over, pass a cloth beneath, and tie again. Short boards may also be used with advantage. Two persons working in unison can often carry the plant and block of earth on their spades, and place it in the desired spot with very little disturbance of the roots. These directions apply to evergreen shrubs, plants in bloom, or in a state of growth, clumps of sprouting bulbs, and similar things. Deciduous shrubs, in localities where they have not yet begun to grow, may be removed without lifting any ball of earth.

Recent Purchases of potted plants for the garden need a little more than ordinary attention for a few weeks. If they have been grown in a greenhouse they may flag somewhat, but judicious shading and watering will bring them out. The best plants to buy are those which have been hardened for some weeks in a lath house or out of doors, or have at least been kept in a cool greenhouse. There are still some people who do not know how to get a plant out of a pot. Place the hand over the top of the pot, with the stem between the fingers, invert it, and tap the pot lightly on the top of a post or edge of a box. In most cases it will slip out easily. If the roots have grown through the bottom push them upward at the same time, or cut them off. Set the plant only a little deeper than before. If the ball of earth is hard, soak it well.

Soft wood sprouts of roses and deciduous shrubs may be rubbed off, if too many start. This will save the strength of the plant, and make the fall pruning lighter. This is especially applicable to the case of rose and other suckers, so annoying and numerous. Budded roses are often nearly unbearable from this cause. Wherever it is possible roses on their own roots should be planted. Avoid budding on the common thorny Castilian stock.

Manuring Roses may be done now. Hen manure is the very best, and may be dug in about the roots, to the great improvement of the color and substance of the flowers. Iron filings, and soot or charcoal, will deepen the color very decidedly, producing a shade of purple which appears nearly black. Some people are in the habit of emptying a paper or two of tacks into the hole where a rose bush is to be planted.

Seeds of Annuals may be sown in little patches around the garden, and

mulched with a covering of grass. If the weather is dry they should be cared for every afternoon, and, if necessary, sprinkled. As soon as the young plants appear, the covering should be removed. Heavy soil is liable to crack and harden, so it is not the best for small seeds without an admixture of sand. Sand is always useful for covering seeds.

The Lawn will by this time begin to look fresh and bright. If there are empty places, scatter a little seed over them, and rake the surface. Mow the lawn often. If there are uneven spots on the lawn they should be filled up. The sods of the former surface may be lifted and laid aside, the lawn may then be made level, and the sods replaced; or new grass seed may be sown at this time.

Shrubs on the Lawn add much to the general appearance of the place. They need much care, the best of culture, and well-considered pruning, for single shrubs on the lawn are rather prominent objects. The tree form here is preferable—a clean trunk, without suckers, and an even, rounding head, kept well in hand. Hydrangeas, Spireas, Lilacs, Wigelias, Altheas, Cape Myrtle, Oleanders, and Roses may be mentioned as suitable for this purpose. A circle fully as large in diameter as the spread of the branches should be kept free from grass around the base of each shrub. Sometimes a group or mass of shrubbery, as an island in a grassy sea, is precisely the one thing needed. The tallest shrubs must be in the centre. There may be a mingling of many species; red-berried winter shrubs, white-blossomed spring-time shrubs or brilliantly colored flowers of summer. There must be sufficient space allowed for each plant to preserve its characteristics.

Editorial Department.

HOMES OF WEALTH.

A home should be a living picture, full of harmonious tints and effects. Wealth buys nothing rightly without refinement and knowledge; not even good clothes and friendly service, much less a lovely home where grace and simplicity abide, and nature gives freely, and art is as a temple. Whoever has money, and nothing else besides, can hardly build a stable, or purchase a fountain for his lawn, without offending the proprieties, and revealing his brainlessness to the thinking world. He may rear the costliest of architectural piles, and hire the most famous of landscape gardeners, but a "bought and paid for" feeling will be everywhere manifest, and the whole pretentious display will be a chilly failure.

If a wealthy man would have an artistic home he must earnestly study the use and fitness of materials, and all the smaller details which unite to form a harmonious whole. He must build up his rock-work with mellowed and mossy fragments from the wind-swept hills, or else with dark splinters curiously carved by the chisels of the fretful waves; not with sawed and polished cubes of granite from sunless quarries. He must not bestow the glaring brilliancies of paint and bizarre ornament so profusely on stables, and other out-buildings, that they appear lesser dwellings of men. It will be a sad affair if he tortures his evergreens into the similitude of truncated cones, or dry-goods boxes set on end, or impossible monsters. The graces of nature are to be revealed, not made hideous, by art. The trees surrounding a suburban residence are to be as friendly creatures, full of lusty and magnificent

strength, reaching their fibres deep in the noiseless earth, and tossing their boughs in the windy heavens; they are to develop their fullest beauty and utmost expression. Our oaks shall be sturdy yeomen, our pines shall be stately princes, our lindens and beeches shall be as slender women; we shall have hoary, priest-like trees, and others young and joyous as laughing children; there shall be places in our gardens where wild flowers grow, and where shady recesses, memory-haunted, are full of an enchanted silence. On the sunny slopes holiday butterflies shall aimlessly drift, and linnets build in the grass, and blackbirds call from tree to tree, and bees murmur in the golden lilies.

Wealth joined with true refinement makes homes which are full of a divine unexpectedness; homes of nooks and new surprises, and harmony to the very end. Nature is under control, but it is nature still, overflowing in vines and blossoms, or climbing in sunny spires of foliage, until the costly villa is a harmonious element blending everywhere, half hidden, half revealed, visibly the home of wealthy refinement. Whoever rears such a home is the benefactor of humanity; he has increased the beauty and happiness of life; an unconscious influence goes forth to brighten the sad ways of earth; the flowers know him, and the shy birds, and the still forces of heaven.

TO OUR READERS.

We should like to have an occasional letter from each one of our readers who is interested in window-plants, ferneries, green-houses, gardens, orchards, fruitful fields, or comfortable homes. Write to us whenever you have a question to ask, or a bit of information to bestow on the rest of our circle. Write

of the natural history, botany, and resources of your neighborhood. Write and tell us when we have done a good thing; affectionately denounce our errors; consider this office a horticultural telephone, into whose open ear all manners of ideas may be poured.

It is not necessary for our friends to wait until they have material to fill a letter. We have an abiding faith in the virtue of postal cards. The gist of a long experiment may often be condensed into a few terse lines, penciled on a postal, and sent to us. There are some men whose postal cards are worth more than other men's laborious letters. We need facts; facts which bear upon the horticultural interests of this coast; facts of soil, of wind-currents and rainfall, of northers and frosts, of success here and failure there, of new plants, and of the treatment of old favorites. Short and breezy notes will always be welcome. We ought to have some friendly horticulturist in each county and town on the coast who will help to keep our correspondence lively.

WHAT CAN WE GROW BEST IN CALIFORNIA?

Nobody has ever yet found an earthly region where every species of tree, shrub, flowering plant and fern grew with equal success. The laws of nature are diametrically opposed to any such conditions. In some places a greater range is possible than elsewhere. In some countries, as in California, the character and direction of the valleys and mountain ranges, the wind-currents and climatic influences, all combine to produce a great variety of climates, and of necessity a wide range of products. But at some point a limit is found; some things can not be grown at all, and others only occasionally. To try to grow out-doors what can not be

so grown, ends in grief and tribulation ; to understand our profitable crops, and trees healthy here, is a comfort and a satisfaction. We can understand the feelings of botanists when people in Massachusetts, Vermont, and even Canada, began to talk of planting *Eucalyptus globulus*—nay, did in many cases actually plant them !

It is a long and hard investigation, to find out within reasonable limits, what we can grow here with safety and profit. If men plant what frosts kill, or what needs a more humid atmosphere, they will soon become discouraged, and their failures will also tend to discourage others. Can we grow Coffee with profit? Only in a few sheltered and exceptional spots, somewhat elevated, and free from frosts. And will Bananas, Guavas, Pineapples, and similar fruits ever be universally grown in California? Our recent severe weather gives proof that only a few of the southern counties can make these fruits profitable. Indeed, even in ordinary winters, the out-door growth of these fruits is very problematical in central and northern California. There is enough which we are able to bring to perfection ; let us experiment cautiously with such doubtful products.

On the other hand, we may be sure that orange culture will extend with more or less success, over most of central California, and in sheltered valleys as far north as Tehama. It will eventually be found, we feel certain, that trees and shrubs and wooded plants are wonderfully adapted to our peculiar seasons. This is a land where the trees and shrubs of the temperate and sub-tropical regions flourish surprisingly. There are effects produced by Alpine and frigid zone plants, which we must forego. Near the coast, and north of Point Conception, we will never, except

in summers of unusual warmth, be able to bed out Coleuses with any satisfaction, for our nights are too chilly. Some localities in the warmer valleys will bring out the full beauty of Coleuses and similar plants of tender habit. In Alameda County the common garden Balsam is a small plant and not at all satisfactory ; in the valleys and ravines of Shasta, Trinity, and Tehama, although so much further north, we have seen it make a bush some three or four feet high, and bloom luxuriantly through the short, hot summer.

The moral of such, and similar, facts, is that we have a climate of much variety, and in many ways worth the study of all thoughtful men. It is not yet time for theories ; but facts are always in order. If our friends in each and every county will write us exactly what plants do well with them and what ones fail, we shall be able to accumulate, in the course of time, a great stock of desirable information.

FLOWERS FOR THE CITY CHILDREN.

We have so often been told that California is a land of flowers, and out-door gardens the year around, that we are apt to forget the children of crime and poverty, who seldom touch a grass blade even in this city of almost perpetual summer. The flower missions of New York might well be organized here. There are plenty of sunless alleys and narrow, noisome streets in San Francisco, whose bleached and puny dwellers rarely see an unwithered flower. There are sick beds in hospitals, where feverish sufferers toss, and babble of cool streams and daisies, longing even in their faintness for a gift of flowers.

Now, what we want people to remember is that flowers are beautiful to give away, and that they are needed all over

this city, in thousands of charities, and to brighten countless barren homes. It has often been our delight to take a large and loosely tied bouquet of showy flowers, and wander, as if aimlessly, along those streets where semi-clad, ragged, and, if it must be confessed, unprepossessing urchins do most congregate. Along the wharves, or the lower blocks of Howard and Folsom, or on First St., is a promising spot for floral experiments. If you look good-natured, and saunter along leisurely, holding your flowers in a genial way, there will shortly come a piping, childish voice, old for its years, and unnaturally sharpened:

"Say Mister, will ye gimme a flower?"

There should be some ceremony about the transaction, an air of one conferring a marvelous favor, a moment allowed for choice. Then, the ice being once broken, another and another will speak, and, as you pass along the street, you may scatter flowers, one by one, in places which seldom see a flower. There will be nothing rude or unpleasant. Nearly all the boys and girls will politely thank you; not one will throw away their flowers, but they will brighten, that night, in many a little room, as silent teachers of purity.

Sometime, in some diviner age, the places where men gather, their public halls, theatres, court rooms and offices, will be decorated with plants and flowers, as a means of culture and of delight. Saw-dusted bar-rooms will reform, or perish. The social instincts of the race will find expression in places full of healthy color and fragrance. Sometime, to disregard the beauty of a flower will be considered a disgrace, and half a crime. A flower-loving people are manly, gracious, sincere; they know the gifts of the deep forest, and the flowers that bloom on

the chilly heights, and the modest creepers on the sands above the bright, trembling breakers. So let us give flowers to the children—small gifts indeed, yet perhaps greater than we imagine. It is sad to think of even a single rose withering on its stem, or any flower perishing silently, when we have not anywhere too much gladness, nor too much love and forgiveness. Let the blossoms of our gardens, and the treasures we find in wild rambles, lighten the burdens of many lives. There is nothing gladder than a gift of flowers.

OUR WORK.

There are so many things, each distinctly in its own province, which the CALIFORNIA HORTICULTURIST wants to do, that this whole editorial department would not suffice to tell it all. We have enough to keep ourselves and our friends busy every month in the year. We shall give you glimpses to awaken your curiosity; we shall call upon the lovers of horticulture for an enthusiastic support—and we expect to be overwhelmed with letters and communications.

In the first place, *our botanical work* needs the co-operation of every botanist, amateur, and student on the coast. We desire early notice of new plants found, and lists of the wild flowers which bloom each month in different localities of the State. Indeed, we do not wish to stop here. The new and rare plants of the whole Pacific Slope, of North and South America, and of the island groups toward which our commerce is reaching, are fully within our field. We love original work, and investigation, and the knowledge which adds something to the world's fund. We want to find the men and women who love nature, and know some of her secrets, and can tell what they have

seen. Botany first; we shall study the flowers, the trees, the grasses, the ferns, the mosses, the algæ, and all the forms of vegetable life. Then we shall apply this knowledge to the practical uses of garden, field, and farm. We shall have hints for the costly conservatory, and for the poor sewing-girl's geranium in her window. We shall give glimpses of the world of art, and of the domain of science. Chiefly, we shall try to preserve that freshness which is of the heart of deep forests, where redwood and spruce pierce the blue heavens, while their low branches droop as a tent, and the air is embodied fragrance. Whatever literary excellence can belong to a horticultural monthly we shall endeavor to possess.

But not of ourselves can we fully accomplish this work, and make this monthly an acknowledged authority. Those who recognize the need of the work the CALIFORNIA HORTICULTURIST does, must do what they can to help us. We want pomological notes from our best nurserymen and orchardists, we want articles from every florist, and landscape gardener. We want our amateurs also to help us. An amateur takes care of plants for the love of it, and is always enthusiastic, and capable of writing a good article.

FERNS FOR A HALL.

Nothing is prettier in a front hall than brackets of living plants; and nothing else will give so distinctive an air of friendliness and welcome. The plants may be grown in pots, set in handsome pot covers, and supported by elegant bronze brackets; or, if this seems too expensive, simple wooden brackets, carved or stained, and corner shelves are nice enough for any one. If plants of a drooping habit are used they will soon hide the pot, so the costly pot cov-

ers are not essentials. But the heart of the whole affair is in the plants chosen. They must be plants with persistent foliage, and which thrive well in a cool and somewhat dark room. Palms, Azaleas, and foliage Begonias are suitable. The most universally satisfactory plants for hall decoration are, however, the Ferns. We can recommend the following, and many others will be found equally suitable. *Pteris serrulata*, *Polypodium pectinatum*, *Lastræa decomposita*, *Adiantum formosum*, *A. cuneatum*, *Lomaria gibba*, *Asplenium Fabianum*, *Davallia Canariensis*.

We expect to take up the subject of plants for the hall and parlor, in a more lengthy article, now in preparation, and distinctly designed to meet the wants of people in cities and towns, where garden room is, of necessity, limited.

THE next number will contain an article on the treatment and varieties of the Japan Persimmon, written expressly for us by Mr. J. J. Jarman, the well-known florist and nurseryman of Yokohama, Japan. Mr. Jarman has spent over fifteen years in Japan, and is a thoroughly practical nurseryman.

A POPULAR TEA ROSE.—Our engraving, for which we are again indebted to the *Pacific Rural Press*, shows the *Cornelia Cook Tea Rose*, which has for some time been regarded as *par excellence* by the florists of New York city. It sells there at about five times the price of the ordinary tea rose—or about fifty dollars per one hundred cut buds (not plants)—during the holiday season. One grower at Madison, N. J., has no less than 5,000 square feet of greenhouse devoted to the growing of this rose alone, for buds to be sold to the florists of New York and other large

cities, who make them up into baskets, bouquets, etc. The flower is white, sometimes tinged with a shade of straw color, and of the richest tea fragrance. The engraving, which was taken from the specimens from the greenhouses of Peter Henderson, Jersey City Heights, N. Y., is not quite half of the natural size.

SEEDLING JAPAN QUINCE.

A correspondent of the *Gardener's Monthly* gives his experience in raising seedlings from the scarlet and pink Japan quince. He says they were thirteen years old before they flowered, but they then gave him six or seven different tints of bloom unlike the plants. This statement has been commented upon by most of the Eastern journals, and it appears to be the opinion that the Japan quince rarely perfects fruit in the Eastern States. With us a large Japan quince tree is very apt to bear well, and ripen its fruit also. We saw one last year in Shasta County which was over eight feet high, and had upwards of one hundred ripe quinces, which were very ornamental. In the nurseries of John Rock, San Jose, we have on two separate occasions observed this quince fruiting. In one instance, near Oakland, we saw seedlings produced abundantly around the base of the tree. They grew rapidly, and showed some marked differences in foliage, but were unfortunately destroyed. It is now in order for our enterprising nurserymen and florists to hybridize the white Japan quince with the scarlet or the pink, and endeavor to cause it to "break" into a mottled or striped variety. It is not at all likely that in this climate we shall have to wait thirteen years. If the seedlings do not bloom in a few years, they might be grafted on older plants to expedite matters.

"THE FOOTHILLS OF THE SIERRA."—Under this title Mr. B. B. Redding has recently prepared a most valuable paper on a region of great prospective value to this State. The paper was first read before the California Academy of Sciences, and was then published by the *Argonaut*, and by the *Rural Press*. Mr. Redding has the faculty of choosing topics of wide interest, and he treats them in an exhaustive manner, so that his words have a real weight and authority. We are sorry that we have not space to make the quotations, but we advise those who think there are no unoccupied lands left in this new State, to read Mr. Redding's well-fortified statements.

THE April number will also contain articles by Felix Gillet, J. B. Hickman, Mrs. Bingham and others. The editorial notes will be unusually full. There will also be something on budding the Orange. The correspondence department will treat of avenue trees, and other timely topics.

PLANTS NEAR SAN FRANCISCO BAY.

We leave the shore, and ascend the hill, gathering the wild flowers as we go. Patches of *Lupinus micanthus*, and *Orthocarpus erianthus*, fleck the hillsides with blue and white, but the show of the flowers is not on this southern side, exposed to the rough westerly blasts of the Pacific, as they sweep through the valley, but on the moister and comparatively more sheltered north-eastern slope. One of the most abundant of flowers, here, and in the whole vicinity of San Francisco, is the *Oenothera primuloides*, a stemless plant with yellow blossoms, each on its own peduncle, reminding us of the primrose. Another flower, plentiful on this hill, but very local in its distribution, is the

purple and white *Collinsia bicolor*, belonging to the same order with the *Mimuli*, two kinds of which, (*Mimulus luteus*, and *M. glutinosus*) may be found near by the former by the water courses, and in the wet places which abound after a heavy rain, the latter on the dry hillside. The great, yellow, daisy-like *Layia platyglossa*, with its ray florets tipped with cream color, from which it has earned its name of "tidy-tips," is to be seen here and there, but it does not show as it does across the bay at Oakland, where whole fields are golden with its blossoms.

The *Eschscholtzia Californica* is here of course; there is not a month in the year when it can not be found, but now it is in its glory, and the gorgeous orange petals induce every urchin that comes along to gather the "Lilies," as he calls them. Another of the Poppy tribe, the little "cream cup" (*Platystemon Californicum*), may be found if looked for, for it is modest—unlike poppies in general. *Orthocarpus* is a very conspicuous genus; on this hillside we gather, besides the white one already mentioned, the purple and yellow *O. castillejoides*, and the tiny flowered *O. pusillus*. *Nemophila insignis* is almost out of blossom, yet we find a few, and among the loose stones, higher up the hill we find one of its rare relations, the rough, almost prickly, *Phacelia Loasifolia* of Torrey. The more common *Phacelias*, *P. circinata*, with its coarse foliage, and cats'-tail-like, curled flower-spike, and the more delicate *P. tanacetifolia* we do not meet with in this ramble. The Rose order is represented by only one plant, the humble *Acæna trifida*, a near relation of the *Sanguisorba*, or Burnet.

Almost the only shrubs to be found are a dwarf oak, and the poison oak, (*Rhus diversiloba*), the latter unfortu-

nately only too common, as we find to our cost next day, when our wrists inflame and become covered with the pustules produced by the juice. It lurks in every bunch of tall herbage, its glossy green leaves, and greenish racemes of flowers, mingled with the *Phacelias*, and other harmless plants, in so intricate a way that it is impossible to collect them without contact with it. On the hillsides it is low and straggling, its roots running to great distances under the surface; in the copses it forms large bushes, and in the forests it is a huge climber, distinguished as "Poison Ivy."—*American Naturalist*.

A NEW and strong stock for grafting the pear on in order to dwarf it, and one promising to take the place of the quince, according to Mr. Wm. C. Strong, is the *Pyrus japonica*. He finds the habit of growth of the seedlings to be clean and upright, quite in contrast with the plants usually propagated by root cuttings, and so well pleased is he with the prospect that he has now in his nursery fifteen thousand of the seedlings.

WINDOW PLANTS.—Were we required to furnish a list of ten plants for window culture during winter, our choice would be as below: 1. Rose Geranium; 2. Zonale Geranium; 3. Variegated Geranium, Mrs. Pollock; 4. Fuchsia; 5. Heliotrope; 6. Calla Lily; 7. Carnation Pink; 8. Ivy Geraniums; 9. Tradescantia, or Wandering Jew; 10. Begonia Rex. We can hardly see where we could diminish this list, which offers many varieties and plants of a hardy nature, a thrifty growth, and pleasing appearance, yet we would desire to add many, as the Double Geraniums, the Oleander, Panicum, Variegatum, Cyclamen, and Tea Rose, etc.—*Scientific Farmer*.

Editorial Notes.

THE REDWOOD.—One of our handsomest native conifers is the redwood, (*Taxodium sempervirens*.) It is a grand tree in its chosen home, on the Navarro, or Noyo River, or in the Santa Cruz Mountains. Who that has loved the woods can ever forget the great ridged and rugged shaft, rising like the monolithic column of some ancient temple, crowned with downward curving branches, and shining emerald? When a tree has been felled there springs from its root a sudden multitude of sprouts, making as it were an island of green in the undergrowth. Instead of the sturdy, defiant tree, weather-beaten and worn, we have a clump of wavering green, full of wind-trembles, bird-titters, and untold balsamic odors. As one journeys through the redwood regions there is for miles and days this sense of fragrance, of hope, and of infinite singing, equaled only on the bracing heights of the Sierras, where junipers cling to the rocks, and pines fill the hollows with a continual moan, sweeter than the weird murmur of a summer sea.

We ought to have the redwood planted on many treeless slopes. It is much more valuable for timber than is the Monterey Cypress or Pine, and it can as easily be grown in large quantity. When it is planted for ornamental purposes a difficulty arises. Hardly any other conifer varies so much when grown from seed. Some of the young trees will be compact, rich green, and highly satisfactory; others will be ragged, uneven, bad color, and not fit for sale. We believe that much can be done by selecting seed from only fine trees, and any particularly choice seedling may be easily propagated by cuttings or by grafting. Our local papers have been speaking of a redwood tree, in Sonoma Co., which has almost pure white foliage, but has so far defied propagation. We once saw a large redwood tree which showed very distinct yellow markings, quite as good as the Golden Arborvitæ. Such things show that there is room for experiment with the redwood.

RIVINA HUMILIS.—We notice that the *Country Gentleman* speaks of this plant as a great attraction. It forms a small bush of graceful appearance, with bright leaves, and racemes of brilliant scarlet berries, produced in great abundance. The small greenish flowers are of little beauty, but the berries, leaves, and general habit of the plant render it desirable for winter-blooming in the house. The first plants of Rivina we ever saw were at the establishment of W. F. Kelsey, Oakland; some of the largest were two and three feet high. We afterwards saw it at Mr. Hutchison's and elsewhere. It is grown best from seed.

MUSTARD WATER FOR INSECTS.—The papers have been recommending the use of mustard water for

driving off or destroying insects in the soil of flower pots. The proportions given are a tablespoonful of mustard to a gallon of water, but this seems rather weak; and the strength of the dose might be doubled without injury. We do not have an extreme degree of faith in the affair; we had thought the true province of mustard was in the direction of plasters for small boys with colds, and also as an adjunct to the honest citizen's lunch. If pungent vegetable matter is a panacea for insects on plants, suppose we try an extract of grated and tearful horse-radish, or a distillation of the odoriferous onion, or the *symlocarpus fetidus*—but this is not a safe subject to pursue.

BOTANISTS' LETTERS.—Some of our Pacific Coast botanists have begun to send us friendly letters, words of encouragement, occasional notes, lists of plants, and names of flower-lovers, as we requested. Now this is as it should be, and there can hardly be too much of it. We may not immediately use all the material sent to us, but we want sufficient to be able to choose the most timely articles each month. It is the private, friendly letters, not intended for publication, which have made the past month pleasant. From Sierra Valley the genial botanist whose articles on the "cone bearers" are now being published in the *Rural Press* sends us his greeting, and long and welcome letters. Santa Barbara, Petaluma, Santa Cruz, Sacramento, and dozens of other places, have each some enthusiastic botanist who has sent us greeting. Now let us all take hold with a vim, and make this *HORTICULTURIST* equal to the best in the land. Let us give it a freshness all its own, and an adaptability to the needs of this coast.

NORTH AMERICAN WILLOWS.—We notice with much pleasure that Mr. M. S. Bebb, of Illinois, who has devoted many years to the study of Salices, is now ready to supply the correspondents of the Cambridge *Botanic Garden* with cuttings of thirty-three species of North American Willows. The *Garden* for January 4th gives the complete list. Mr. Bebb will be glad to receive cuttings of other willows.

A DRY PATH FOR GARDENS.—"A good dry path may be made in the following manner," says a recent writer. "After removing three or four inches of the surface soil put in a layer of broken stones or bricks, road metal size, and fill in the interstices with smaller stones and sand mixed with as much coal-tar as will moisten it, and no more. It should then be rolled. In three or four days give a coating, one-eighth of an inch thick, of sand and coal-tar, made as dry as possible, and roll again, first sprinkling the surface with dry sand to prevent the mixture from adhering to the roller. In ten days it will be fit for use."

THE REDWOOD IN ENGLAND.—No. 373 of the *Garden* contains a most valuable article on "trees of the future," which has a word of hearty praise for

the Redwood, which has no equal for planting near the sea, where it can luxuriate in the cool dampness of sea-fog, such as it obtains in its own forests of Mendocino and Humboldt. Among other trees of great promise are mentioned *Pinus macrocarpa* (or *Coulteri*), which is exceedingly large in leaf, branch, and fruit, and in every way handsome; *Cryptomeria Japonica*, which looks beautiful in all stages of growth; *Pinus densiflora*, which should be grown as an isolated specimen; and *Pinus Massoniana*, a tree of the wildest and most original growth, which, planted in clumps, will reproduce something of Japanese quaintness.

BUDDED ORANGES VS. SEEDLINGS.—For several years past there has been a fierce war waged between the friends of budded oranges and the friends of seedlings. Authorities, pro and con, have been quoted. Nurserymen have taken sides, some from honest convictions, others, possibly, from an eye to the character of their stock. The newspapers have occasionally had a hearing on the topic, and most orchardists have given it some consideration. We believe the same discussion has been ripe in Florida and also in Australia.

There are many points in favor of budded oranges. They bear earlier, and are of more uniform quality. No person can for a moment doubt that some seedlings are better worth propagating than are others. But—and it is a very important demurrer—the weight of evidence appears so far to be that seedlings withstood the cold weather of this winter much better than did the budded trees. Agents from the southern counties sold many budded trees in central and northern California last fall. It has been a hard season for these trees, and would-be orange planters in many cases feel discouraged. Though we admit the improbability of such another winter for many years to come, we must still feel that seedling oranges have, in this respect, an advantage.

Although budded oranges come into bearing sooner than do seedlings, still it is claimed that the superior longevity of the seedling will more than counterbalance this advantage. Time only, that truth-discoverer and friend of knowledge, can settle this point. Meanwhile, since nurserymen are themselves unsettled on this orange question, it is permitted to common folks to choose for themselves.

A LARGE SHADDOCK.—On the last Chinese New Year we were presented with an immense, yellow, obovate fruit, which was decidedly the largest shaddock we have ever seen. Its general appearance was that of an exaggerated orange. It weighed slightly over two and one-fourth pounds. The longest diameter was six and nine-sixteenths inches; the longitudinal circumference was twenty and one-half inches; the circumference near the largest end was nineteen inches. If only the shaddock were a palatable fruit! Now here is a chance for those enterprising nurserymen who always have a few dozen

otherwhere unattainable novelties. Just let them advertise a new fruit—hybrid of orange and shaddock. It might be called the "Grand Magnificence," or "Crown of Civilization," or "Citrus Giant." We are sure they can invent some grandiloquent name—and sell their shaddocks.

SPRING AND SUMMER FLOWERING STOVE PLANTS.

—The public fancy has, for some years, been running towards the so-called "foliage plants," and many fragrant and beautiful plants are almost wholly neglected. Palms, Cycads, and similar foliage plants are doubtless much easier to take care of than such flowering plants as the Euphorbias, Poinsettias, Orchids, etc.

Of spring and summer flowering plants we would mention *Stephanotis floribunda*, the *Ixoras*, and the gorgeous *Dipladenias*.

HOW TO SEE CALIFORNIA.—It is nearly time for our Eastern visitors to begin putting in an appearance. They will doubtless invest in numberless guide-books and books of California travels, but the gist of needed advice is contained in a letter we recently received:

"Take the furthestest points south now, or as soon as possible. The southern counties of the State are at their loveliest from now on until June. In March is the time when the Orange trees are in blossom, and the whole air is redolent with the delicious perfume."

Now this is good advice, and we will supplement it by saying that *after* June is the best time to see the northern coast counties, Mendocino, Humboldt, and Del Norte, as also the northern Sierra counties of Modoc, Plumas, Lassen, Nevada, and others.

LIST OF PLANTS FOR ROCK-WORK.—Among the most useful plants for this purpose are the Saxifragas, of which a list of over fifty distinct kinds might be given. We content ourselves with only a few of the best. *S. aizoon* forms clumps, leaves gray, with white edges; *S. Andrewsii* has green leaves notched with white; *S. circulata* has leaves frosted over with white dots; *S. ligulata* has broad leaves; *S. longifolia* forms a rosette, with serrate and dark-green leaves curving from the crown; *S. pectinata* has very small and frost-like leaves; *S. pyramidalis* is quite large, and the white flower-plumes are often two feet high; *S. atropurpurea* has, as its name indicates, purplish leaves.

The Sedums form another class of rock-work plants. *S. brevifolium* is greyish, white, and red; *S. Corsicum* is light green; *S. glaucum* is of a bluish green tint, and one of the most effective; *S. farinosum* is a light, glaucous green, becoming almost white towards the tips; *S. multiceps* has small, round heads.

The Echeverias are all suitable for this purpose; we must note, as of value, the following: *E. atro-*

purpurea, with purplish-red, narrow leaves; *E. Californica*, with narrow glaucous leaves, and an unilateral cyme of yellow flowers; *E. metallica*, with large, massive, recurved leaves, forming a perfect rosette; *E. glauca* has grayish leaves, and is of dwarf habit; *E. gibbiflora* has wedge-shaped mucronate leaves, and flowers of red and yellow; *E. lurida* is stemless, and the leaves are narrow, channeled, glaucous, tinged with purple.

The *Sempervirens* must not be neglected. *S. tabulæforme* grows with the utmost regularity, forming a perfect circle, and flat across the top; *S. arborescens* turns dark when grown out doors, and grows two feet high; *S. Californicum* is a bright green with black points; *S. Montanum* grows close and thick, and is neatly imbricated.

There are many other rock-work plants, not yet widely known on this coast. *Mesembryanthemum tigrinum* is beautifully spotted, and the leaves, which have serrate edges, open so as to resemble a tiger's jaw; *Roechea falcata* is a long-blooming succulent, with bright orange-scarlet flowers; *Kleinia repens* has very blue foliage.

All the above mentioned plants are good bedders; all are suited to a dry climate, and should become popular.

THE WOOLLY APPLE-TREE LOUSE, (*Eriosoma lanigera*).—This pest of our apple-trees, known otherwise as the "woolly aphid," is described by Mr. Mann, in a recent number of the *Rural New Yorker*. After a history of this pest, the young, mode of increasing, and manner of depositing the eggs, the important topic of remedies is discussed. "The presence of the insects," he says, "is marked so conspicuously that there can be no difficulty in finding them. Wherever found they should be destroyed. Any oily substance or liquor that is destructive to insects, applied directly to them, will serve the purpose. A mixture of equal weight of fish-oil and melted rosin, applied when warm, spirits of tar, spirits of turpentine, oil, soft-soap, a kilogram of potash in seven litres of water have all been recommended. Perhaps the most practical remedy would be the application of kerosene, benzine, or turpentine directly upon the insects."

There is hardly any pest which has caused so much alarm among orchardists and nurserymen, as this same woolly aphid, and, let us add, none that has done more damage. In old apple orchards we have seen it in masses on the trunk and branches, and filling the crevices and hollows in the ground near the trees. When the evil reaches such a pass the trees are worse than dead, and the aphid is blown for many rods distant spreading the insidious destroyer. Such orchards ought to be cut down and turned into wheat fields for a few years. The greatest care must be taken to get perfectly healthy trees from the nursery, and to take no other. Then plant them as far as possible from other apple orchards. Prevention is better than cure.

FERN PEAT.—Persons who are in the habit of rambling through our foothills with their eyes open, may have observed the fibrous and peaty character of the soil in which the common large Fern, or Brake, delights to grow. Wherever, at the head of some ravine, or in a level space somewhat shaded, this large fern is found thriving, there will be a good opportunity to get potting soil of great value for ferns, and terrestrial Orchids. A little pile of peaty fibrous soil is often of much service to the amateur gardener, and some plants hardly grow without it.

SOME OTHER FORMS OF VASES.—Our "new correspondent" gives us some hints on the arrangement of flowers in vases. She speaks of the trumpet vase, with one tazza, and a trumpet, a very beautiful form for the mantel. Another style of vase, and one much admired, is that known as the marchain, which has a lower tazza, an upper tazza, and a trumpet. There is also a form of vase with three curved trumpets of equal height, and one in the middle, rising above them. Then there is, of course, the simple vase with one trumpet, and no tazza. Each of these differing forms has differing requirements, and an arrangement of its own. We hope our lady subscribers will write and tell us what vases they use and how they fill them at different seasons of the year, being careful to name the flowers used, and to describe the way in which they arrange them. This is an interesting subject which few horticultural or floral magazines have ever taken up. Let us each, therefore, tell our methods and discoveries. How do we keep our flowers fresh the longest? What flowers and foliage look best at night, or under gas-light? Is there not some common weed, or well-known plant, which has developed surprisingly in some new place? We make these queries as suggestions to all decoratively inclined citizens.

Pomological Notes.

HARDY GRAPES.—There are places in the extreme northern part of our State where choice foreign grapes will not grow. The Concord, Catawba, Isabella, Ives, Iona, and other varieties well known in the Eastern States should be planted in these localities. Prominent among the newer varieties which are said to be productive and hardy is the Rebecca. Another highly recommended grape is Moore's Early, which ripens twenty days before the Concord. It is a black grape of good quality, and has taken prizes wherever shown. It has been exposed to a temperature of twenty degrees below zero without injury, and we think our friends in Lassen and Siskiyou will find it a success.

THE CHINESE FLAT PEACH.—The other day, as we were passing the store of Mr. R. J. Trumbull, on Sansome Street, we saw some very thrifty looking peach trees standing in a barrel on the sidewalk.

They proved to be trees of the Chinese variety, known also as the "Peen-to," and were grown by Mrs. Longstreet, of Los Angeles, who has, we believe, the only bearing trees on the coast, and probably the only nursery stock. Mrs. Longstreet states that the tree bears early and abundantly, and stands a drought much better than the ordinary peach. It is, in quality, of the best, and her neighbors are planting it for market. The season is early, almost ripening with Briggs' May. We examined one of the peaches, which much resembles a small, evenly shaped tomato, having a very slight suture and a blunt apex. The flesh is white and firm. The pit is extremely small, offering a marked advantage, the waste being less. Randolph Peters and some other Eastern nurserymen have been widely advertising this peach for a season or two. We shall watch its course with interest.

THE VARIETIES OF DAMSON.—The Damson is one of the most popular and widely cultivated of English fruits. It is not found on the continent, or elsewhere, except in the United States. There are several varieties, all originating from the wild plum (*Prunus insititia*).

English Damson.—This is the most common variety, and is sometimes called the Round Damson, Common Damson, Black Damson, etc. The fruit is small, roundish-ovate; the skin deep purple, or nearly black, with a fine bloom. Flesh greenish-yellow, acid. It ripens early, and is a good bearer.

Shropshire Damson, or Long Damson, Prune Damson, etc.—The fruits of this are much larger than the Common Damson. Shape, long, ovate, tapering to the stalk; skin thick; flesh firm, adhering somewhat to the stone. This is a variety of excellent quality, and the best for preserves.

American Damson.—The fruit is large, round, skin dark purple, slightly spotted with brown. Flesh greenish-yellow, adhering to the stone, juicy, melting, highly flavored. It is said to be synonymous with Frost Gage, and is rather a shy bearer.

Crittenden's Prolific, and *Rochester Damsons*, are large and prolific varieties known in Kent.—*Florist.*

New & Desirable Plants.

[We shall glean from our exchanges and correspondence, notes on plants either new, or of promise in our climate. Our nurserymen are invited to send notes on any interesting plants received.]

ATHYRIUM SCANDIQUINUM.—This is a beautiful miniature Tree Fern, which is a native of the Sandwich Islands, and has been grown in this State for some time past. It was lately introduced into England, and is called one of the most attractive of recent acquisitions. The *Garden* gives an illustration and description. It appears that the plant was first exhibited under the name of *Alsophila plumosa*, and it is extremely variable in its method of growth, in

the character of the frond, and in the relative development of the stem. It is probable that several sub-varieties of this elegant dwarf Tree Fern will come into cultivation.

A NEW FLOWER.—The Italian *Fanfulla* records the discovery of a new gigantic flower, which is of such an amazing splendor as well as size that the *Victoria Regia* and the *Rafflesia Arnoldi* appear mere dwarfs by its side. The fortunate finder of this remarkable plant is the renowned traveler and naturalist Odoardo Beccari, who has chiefly earned his fame by his exhaustive researches in the East Indian Archipelago. This hitherto unknown flower unfolds its mighty chalice bud in the forests of Sumatra. The discoverer attributes it to the family of *Amorphophallus*, and has given it the specific name of *Titanum*. The diameter of the flower, when full blown, averages thirty-three inches.—*London Globe.*

MILLA LEICHTLINI.—This lovely little plant, which is found at a great elevation on the Andes, has been blooming in England during January and February. The flowers are white, with faint radiating green streaks; they are delightfully fragrant, and reveal themselves shyly from the rosette of narrow leaves.

RHODODENDRON LEPIDOTUM.—This is a dwarfish Rhododendron of the Himalaya Mountains, which occurs between the altitudes of 8,000 and 16,000 feet. It has so great a vertical range that it varies considerably in size and minor details. It is a free bloomer, and the rosy-red flowers rise well above the foliage. This plant forms the subject of plate CLIX of the *Garden*, and we quote mainly from the annexed description.

NIPHOBOLUS HETERACTIS.—This is a Himalayan Fern which is more vigorous than its Japanese relative *N. lingua*, and the fronds are much larger, being often eighteen inches long, including the stipes. It received its name in allusion to the diversity of the rays of the starry scales with which the under surface of the frond is furnished.—Condensed from *Garden*.

NOVELTIES IN THE ROYAL GARDENS, KEW.—*Crinum Forbesianum* is one of the most important of the introduction to Kew this year, and certainly ranks high among the finest species. It appears to be very dwarf in habit, the scape not being longer than a foot. The bulb is of large size, from 7 to 8 inches diameter and ovoid in form. The leaves are just appearing and seem inclined to spread; their margins are finely ciliated. No other species produces so large an umbel. The flowers numbered over two dozen, and each of considerable size, something in form like *C. ornatum*, to which set it belongs. This species embodies a fine feature in the coloring of the flowers; each segment has a broad line of deep rose along the centre, and this rich

color shades off to a pure white margin. It was derived from the Lebombo Mountains north of Natal. This plant is in the Begonia house. Close at hand is a remarkable *Hippeastrum* with green flowers, introduced by Messrs. Veitch and named *H. calyptratum*. It appears to flower freely, scapes having been thrown up in succession. In the next house *Mesembryanthemum fragrans* is the only one in effective condition, and this is extremely pretty, with five large yellow flowers nearly 3 inches across, and, as the name denotes, fragrant, and that very sweetly. It is one of the creeping kinds, with deep green very fleshy leaves, forming the tongue-leaved section.

One of the prettiest plants in flower and rare is *Trichinium Manglesi*, in perfection, too, for many weeks past. It is an *Amaranth*, native of the Swan River, and the rosy flowers are mixed with fine white hairs in a dense roundish cluster. It is nearly hardy, but is best grown under glass, at least during the greater part of the year. It is very slow of increase unless taken in hand the right way, and this is by cutting up the rootstock. The leaves are rather scanty, and the flower stalks slender and naturally decumbent, so that a good specimen can only be had by grouping. We should recommend early propagation by the above means, so that plants are ready for the open ground in May. In September those likely to flower should be taken up to bloom under glass, since no other plant could suffer more from splashing of dirt by heavy rain.

Economic plants are not of general interest, but we may note one of considerable beauty, though only an annual—a class, by the way, increasing greatly in popularity. This is *Guizotia oleifera*, allied to *Helipopsis*, and bearing flower heads about two inches across with a fine bright yellow ray. It yields the important Ram-til oil of India, used in India as a condiment and for burning in lamps. The plant assumes a pyramidal form and flowers freely. The leaves are oblong or lanceolate, and light green in color. *Osmanthus fragrans* is worth mention for its most delicious perfume, utilized by the Chinese for perfuming tea, hence its position in this house. As an idea we should rather prefer a plant in flower on the table itself, and the tea aroma would mix with its perfume agreeably without doubt. The leaves are dark green and handsome. The plant admits of cutting freely, so that it can be kept to any size or shape, and sprigs are freely available without injury. It is grown from cuttings, or may be grafted on *Privet* and planted against a wall, though it flowers freely only under glass. [*Osmanthus fragrans* is for sale at several of our nurseries, and bids fair to become a most popular shrub.—ED. HORT.]

A fine new *Machæranthera*, finer than any hitherto introduced, is in great beauty. No name has yet been given, but a figure will be published in the "Botanical Magazine," no doubt under the genus *Aster*, to which the above has been reduced. It appears of biennial duration, though if sown early, as in this

case, flowers are produced the same year. The flower heads are over two inches across, of deep bluish purple, and very numerous produced in large panicles. It came from Colorado, apparently with much greater success than the beetle.

In the succulent house a very fine form of *Agave schidigera* will shortly open flowers. We admire the plant in the first place, the flowers being rather of interest but without beauty. Every leaf is thickly covered with white threads, which, curling about, afford an unusual kind of beauty. As well known, the collection of this genus is important, some kinds being represented here only, and of this number we might mention *A. dentata*, a plant in the way of *A. attenuata*, but with very minute and numerous teeth. We are especially charmed with a nice plant of *A. Utahensis* with narrow silvery leaves, radiating and, as it were, forming a star. It is said to be hardy, but a plant so rare and choice can not be permitted to prove the question. Of the new species *A. Desertii* and *A. Shawi* are good representatives.—*Journal of Horticulture*.

Reviews and Exchanges.

[All books on subjects in any way connected with horticulture will be reviewed in this department. Publishers are requested to state the price of each book sent.]

FERNS IN THEIR HOMES AND OURS. By John Robinson. S. E. Cassino, Salem; A. L. Bancroft & Co., San Francisco.

This is a book which has had a large and fully deserved sale. The information on the species of ferns, and their treatment, which is contained in this volume, was formerly scattered over many costly reports, magazines, and botanical works. A glance at the list of authorities and works referred to will show the pains taken by the author. The chapters on the "Life of a Fern," on "Classification of Ferns," and on the "Distribution and Nomenclature of Ferns," display accurate and scientific knowledge. There are other chapters on collecting ferns, on ferneries, on tree-ferns, propagating ferns, selaginellas, and similar subjects. Twenty-two plates, some of them wood-cuts of jardinières and ferneries, others tinted engravings of choice ferns, adorn the volume. The frontispiece is a photograph of the author's fern-house.

We quote a few paragraphs from the chapter on Fern-pests. It will doubtless assist some of our correspondents:

"The Aphis, or plant-lice, may be destroyed by tobacco smoke. In fact, if the greenhouse is smoked lightly every week, as it should be, very little trouble will be experienced from this source. When house-plants or ferneries are attacked by them the Aphides may be readily removed by using a soft brush."

"The Thrips generally collect unobserved on the under side of the fern-fronds, where they increase

greatly and injure many plants before their presence is suspected. Smoking, which will keep the Aphid in check, will not dislodge the Thrips, while smoke sufficiently strong to kill the Thrips will be sure to injure the most delicate plants. The best method is to select some time when dull weather is expected and give the house, three evenings in succession, as much smoke as is safe. This will usually dispose of the Thrips, but if unsuccessful, repeat the operation soon."

THE NATIVE FLOWERS AND FERNS OF THE UNITED STATES. By Thomas Meehan. L. Prang & Co. Boston; Keller & Co., San Francisco.

Parts XIII, XIV, XV and XVI of this noble work are just received. Part XIII contains chromolithographs of *Hibiscus coccineus*, *Callirrhoe involucrata*, *Campanula rotundifolia*, and *Marsilia quadrifolia*. Part XIV gives us *Silene Virginica*, *Vitis indivisa*, *Ipomœa leptophylla*, and *Antennaria plantaginifolia*. Part XV has *Rosa Lucida*, *Helonium tenuifolium*, *Scutellaria Wrightii*, and *Silene stellata*. Part XVI gives *Stokesia cyanea*, *Talinum teretifolium*, and *Lysimachia quadrifolia*. Among the most pleasing in these sixteen plates are the *Callirrhoe involucrata*, the *Vitis indivisa*, and the *Ipomœa leptophylla*, or Man-root of Colorado. The descriptive articles show the same apt fancy and sound knowledge which has made the preceding numbers so interesting.

The *Garden's* plate for No. 372 is the *Stobæa purpurea*—a rather showy, but coarse South African Thistle. It is most effective in masses. In Benham and Hooker's "Genera Plantarum" *Stobæa* is referred to *Berkheya*, forming a genus of upwards of seventy species.

The *Floral Californian* is a neat and valuable quarterly published at Petaluma by our old friend, W. A. T. Stratton.

Illustrated Annual Register of Rural Affairs for 1879, Luther Tucker & Sons, Albany. This is a publication which has doubtless done much good among the farmers. There are many valuable hints on roads and road-making, on farm buildings and country improvements, and on drainage and health. But we confess that the more than forty pages devoted to descriptions and cuts of farm implements do not impress us favorably. It is dangerously near the nature of advertising.

THE ANNUAL REPORT OF THE COMMISSIONER OF AGRICULTURE.—We have read this report with great care, and note several points of interest. In the first place the investigations of the different divisions of the Department appear to have been of more than usual importance. Fifty thousand tea plants have been distributed, and hopeful progress has been made in the manufacture of tea. In the second place, it is evident that the distribution of seeds is to

be placed on a better basis than the merely political plan heretofore in vogue; we have never had much faith in Government seed business. The natural rivalry of private seedsmen bring new things into market quite fast enough. But, if it is to be done at all, we hope that distributions will be made to only those persons who will take care of them, and report progress. We note, lastly, Franklin B. Hough's valuable work in the Department of Forestry.

Catalogues, etc., Received.

[We shall acknowledge the receipt of all Seed or Plant Catalogues, Pamphlets, Reports of Horticultural Societies, Agricultural Reports and similar documents.]

Catalogue of Vegetable and Flower Seeds, Plants, New Seed Potatoes, etc.; Isaac F. Tillinghast, Factoryville, Pa. Mr. Tillinghast is the author of a work on vegetable plants which has received many warm commendations from the press. He sends out a good catalogue. Among the new strawberries we notice that Great American and Crescent Seedling are ranked as the best.

Peter Henderson's Catalogue of Everything for the Garden—1879. Here we have 182 pages of lists of seeds, plants, horticultural implements, etc. There is a colored vegetable plate, and also a plate of the new striped tea rose, American Banner, of which we spoke in a recent number. The price for strong plants in 3½ inch pots is only \$6!

Sharpless Seedling Strawberry Circular. F. F. Mercer, Catawissa, Pa.

I. C. Wood & Bro.'s Catalogue of Plants, Trees, etc.; Fishkill, N. Y.

Price List of Dahlia Bulbs; Geo. A. Wright, Aledo, Mercer Co., Ill.

Burbank's Seedling Potato Circular. Luther Burbank, Santa Rosa, Sonoma Co. This is highly recommended. We have never seen it, nor do we know of any one in this vicinity who has given it a trial.

Report upon the Condition of Crops, Dec. 1st, 1878; Department of Agriculture, Washington. The wheat and oats crops are called the largest ever raised in the country. The corn crop is somewhat less than that of 1877. *Sorgum* shows an increase. Fruit, a decrease, except on the Pacific Slope.

James M. Thorburn & Co.'s Annual Catalogue of Seeds for 1879. No. 15 John St., New York. This is one of the leading catalogues published in the United States, and Thorburn is a name familiar to all gardeners.

The Bellevue Nursery Co.'s Catalogue of Plants and Seeds, Paterson, N. J., contains a colored plate of *Iris Iberica*, var. *Perryana*.

Catalogue of Warranted Flower and Vegetable Seeds grown and sold by James J. H. Gregory, Marblehead, Mass. This is particularly strong on new and valuable vegetables. We do not think any one can beat Mr. Gregory in that line.

E. BUTTERICK & CO.'S Celebrated Paper Patterns.

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At a meeting of the Board of Directors held this day, a Dividend, free of Federal Tax, of Seven (7) per cent. per annum was declared, on all Deposits, for the term ending December 31st, 1878, payable on and after January 15th, 1879.

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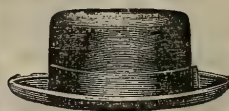
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OPINIONS OF THE PRESS.

What Thomas Meehan says:

THE CALIFORNIA HORTICULTURIST.—"Our esteemed correspondent, Charles H. Shinn, becomes the editor of the CALIFORNIA HORTICULTURIST from the 1st of January of this year. Mr. S. is so well acquainted, practically, with the needs of horticulture on the Pacific coast, and is, withal, so cultivated and forcible a writer, that we anticipate a valuable coadjutor in progressive horticulture by our friend's accession to the editorial chair."—*Gardeners' Monthly*.

We have received the January number of the CALIFORNIA HORTICULTURIST, published by John H. Carmany & Co., San Francisco. Chas. H. Shinn, whose able contributions to the press upon horticultural and other topics have given him so favorable a reputation, has taken editorial charge of the same. The present number is replete with interesting editorial matter, excellent correspondence and choice selections. Every person interested in horticulture should subscribe for it. Subscription, \$2.50 a year, in advance. B. F. Roberts, of Anderson, is agent for Shasta, Tehama and Trinity counties.—*Shasta Record*, Millville, Shasta County.

"The January HORTICULTURIST is full of just what is needed. It gives abundant promise of future usefulness. It will give me great pleasure to aid in extending its circulation."—E. H. SMYTHE, Santa Rosa.

"The January HORTICULTURIST was a very great improvement. I hope gardeners can be got to discuss through its columns any topic of general interest, such as Mr. Ellis's."—R. TRUMBULL, Nurseryman, East Oakland.

"I like the HORTICULTURIST very much."—W. A. SANDERS, Seed Farm, Fresno.

"The January HORTICULTURIST was a real surprise and delight, and it promises still greater success in the future. Long live the HORTICULTURIST!"—MRS. C. A. COLBY, Benicia.

THE CALIFORNIA HORTICULTURIST.—The January number of this valuable monthly is on our desk. The editorship is now in the hands of our literary young friend, Chas. H. Shinn, of Niles. His practical experience in his father's nursery, joined with his good taste and indefatigable industry, will be sure to make him a successful editor of this style of publication. We find, in fact, on looking over this number, the marks of his good judgment in the choice of subjects, as well as the evidence of his fine taste and literary skill in the criticisms and editorial notes. We have no doubt that Mr. Shinn will make a success of this work in a pecuniary as well as an artistic and useful point of view. He has evidently found a congenial sphere of practical usefulness, in which he has our heartiest wishes for complete success, surpassing even his own poetic anticipations.—*Washington Independent*, Alameda Co.

Charles H. Shinn has assumed the editorial management of the CALIFORNIA HORTICULTURIST, and the January number shows great improvement.—*S. F. Bulletin*.

"Your first number of the HORTICULTURIST is a triumph!"—PROF. H. B. NORTON, Norman School.

"I note with interest the new departure of the HORTICULTURIST. You are certain to enlarge the usefulness thereof."—H. P. LIVERMORE, Oakland.

THE CALIFORNIA HORTICULTURIST AND FLORAL MAGAZINE, published by John H. Carmany & Co., San Francisco, began its ninth volume on the 1st instant under the editorial control of Mr. Charles H. Shinn, of Niles, our Alameda County poet and literateur. With the subject of horticulture Mr. Shinn is thoroughly and intimately acquainted, and his opinions on these subjects are marked with an earnestness and intelligence which give them peculiar force. The HORTICULTURIST for this month is an admirable number in all respects. Terms: \$2.50 per annum; single copies, 25c.—*Alameda Encinal*.

THE CALIFORNIA HORTICULTURIST.—We have received No. 1 of Volume IX of the CALIFORNIA HORTICULTURIST AND FLORAL MAGAZINE, which enters upon a new era in its chosen sphere of usefulness under the editorial management of Charles H. Shinn, of Niles. The present number is replete with useful horticultural information, and many of the articles will compare favorably with any of a similar character published anywhere in the United States. A full page colored plate, representing the California Pitcher Plant (*Darlingtonia Californica*) is one of the features of the work, and reflects credit upon the designer and the printer. There are nine original articles in the number contributed by the best botanists of the State. The selections and editorial matter are first-class, and we predict a grand success for this enterprise under Mr. Shinn's management, as he is not only thoroughly familiar with his work, but has the tact necessary for the conduct of a magazine of this description. Copies may be obtained at W. B. Hardy's bookstore at the rate of 25c. each, or \$2.50 per year.—*Daily Radiator*, Oakland.

MOUNTED THE TRIPOD.—Mr. Charles H. Shinn, of Centerville, in this county, and who is well known throughout the State as a brilliant writer and close student, has assumed the editorial management of the CALIFORNIA HORTICULTURIST, the January number of which has just appeared. Mr. Shinn has many warm friends and admirers in this city who will be pleased to learn that he is adding in this manner to the public knowledge from the stores of a highly cultivated mind.—*Evening Tribune*, Oakland.

CALIFORNIA HORTICULTURIST.—The January number of this popular magazine is issued, with a table of contents rich in matters of interest to those engaged in flower and fruit culture. There is, in particular, a contribution from E. J. Hooper, of this city, concerning a remarkable specimen of *Darlingtonia*, or Pitcher Plant, found on Black Hawk Creek, Sierra County. The writer claims it as a new species, and the publishers have thought the discovery of sufficient importance to print a colored cut of the flower as a frontispiece.—*San Francisco Call*.

At hand is the January number of the "California Horticulturist and Floral Magazine," and from which we copy the article written by Dr. Anderson, and found in our columns to-day. Chas. H. Shinn, of Niles, wields the editorial pen.—*Santa Cruz Sentinel*.

THE CALIFORNIA HORTICULTURIST.—We are pleased to see that Mr. Charles H. Shinn has become the editor of the above magazine. He is a generous-hearted man, and a horticulturist by nature, education and practice.—*Rural New Yorker*.

CALIFORNIA HORTICULTURIST.—Mr. Chas. H. Shinn, of Niles, assumes the editor's chair with the January number of the "California Horticulturist," and the improved tone of its pages bespeak for it a prosperous future. A cut of the *Darlingtonia Californica* is given, and reference made by E. J. Hooper of a possibly new species. Prof. E. W. Hilgard discourses on floriculture and the study of botany; Jennie C. Carr writes charmingly of wild gardens, and W. C. L. Drew of Lily culture; while other very interesting contributions grace its pages. We trust the efforts of its talented editor to please will be appreciated.—*Petaluma Argus*.

THE CALIFORNIA HORTICULTURIST AND FLORAL MAGAZINE for January is an unusually vigorous and interesting number, which does credit to the new editorial management of Mr. Shinn. There is not a rural household in the State that would not find its profit in taking and reading this monthly, so replete with information and suggestions touching rural interests, in their economical as well as in their æsthetic relations.—*Contra Costa Gazette*.

CALIFORNIA HORTICULTURIST.—No. 1, Vol. 9, for January, of this well known magazine has made its appearance on our table. It is now under the editorial management of Mr. Chas. H. Shinn, well known in this community as a gentleman and a scholar, and the number before us shows him to be thoroughly posted in the work he has undertaken. No one engaged or interested in horticulture or floriculture should be without this monthly, the subscription price of which is only \$2.50 per annum, or 25c. for a single number.—*Redding Independent*, Shasta Co.

The CALIFORNIA HORTICULTURIST, which has been published for the past eight years, makes an announcement of a change in its editorial management. Mr. E. J. Hooper, who has labored long and earnestly to make the work interesting and useful, retires from the editorial chair, yet will remain to give it his influence and aid. Charles H. Shinn, Esq., so long known as an excellent writer on horticultural topics, and long a valuable correspondent, assumes the editorial chair, and will aim to make it more interesting and valuable, and to enlarge its usefulness by enlarging the magazine and adding to it some new departments.—*California Farmer*.

The CALIFORNIA HORTICULTURIST, a monthly publication of John H. Carmany & Co., San Francisco, is now under the editorial charge of Charles H. Shinn, of Niles. Mr. Shinn at one time taught school in Monterey county. He is a writer of ability, and, thoroughly understanding the field which the "Horticulturist" occupies, will no doubt make it a success.—*Watsonville Pajaronian*.

We welcome to our exchange list the CALIFORNIA HORTICULTURIST AND FLORAL MAGAZINE, published by John H. Carmany & Co., San Francisco, and edited by Charles H. Shinn, of Niles, Alameda County. Mr. Shinn is an able, industrious writer, and is doing good work in the department of horticulture in this State. Every person who has a farm or garden ought to subscribe for the magazine.—*Salinas Index*.

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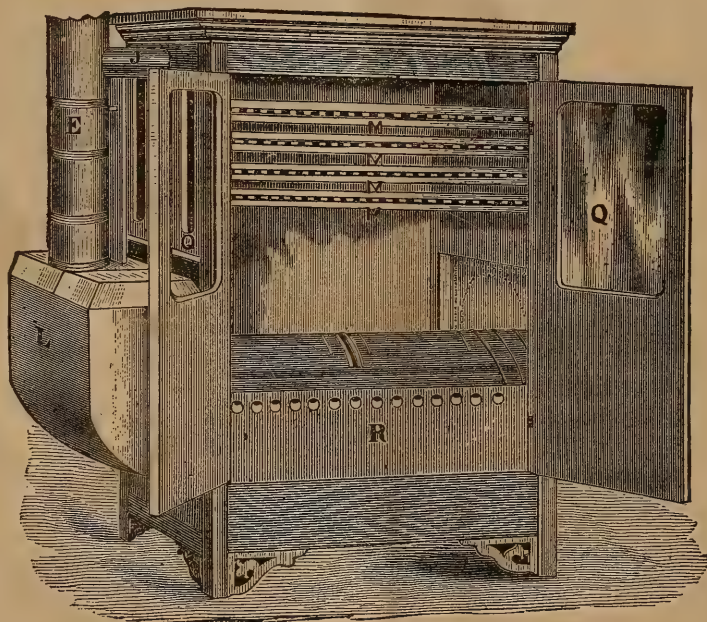
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Vol. IX.

APRIL, 1879.

No. 4.

THE

California Horticulturist

AND

Floral Magazine.

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CHARLES H. SHINN, — — — EDITOR.

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California Horticulturist

AND

FLORAL MAGAZINE.

VOL. IX.

SAN FRANCISCO, APRIL, 1879.

No. 4.

Contributed Articles.

TREATMENT AND VARIETIES OF THE JAPAN PERSIMMON.

By J. J. JARMAN, Yokohama, Japan.

The Diospyros Kaki, or Japanese Persimmon, is one of the principal fruits of Japan, and is very much valued by the people; so much so, indeed, that you can not find a farmer without his Kaki trees. It is the same way with those who are not farmers and who have only a small piece of ground; you will see several Kaki trees planted in some out of the way corner where nothing else would grow. The farmers generally plant them in the outskirts of their land, and under hills, so that they may not get blown about too much. They are seldom or never manured, or given any attention. I have known trees to have stood in the same place ever since I have been in Japan, which has been fifteen years, and I have taken particular notice of these. They have been left to grow at will, and they seem to like it. I may add that where there are large plantations of Kakis the ground is always cultivated, and other crops grown under them. Sometimes barley, turnips, etc., are sown, but mostly the Kakis are planted on the side of the farm, or in the rear of the houses, and

I am positive that the trees I speak of have had nothing done to them.

The reason for not pruning is a very good one. If the last year's shoots were cut off there would be no fruit the following year. The flower comes out after the leaf, and forms in the bases of the leaf, and the flower bud forms itself the autumn before, so that, as I have stated before, if you were to prune the trees you would lose all the fruit for that year.

The Kaki will grow in any place, and I believe in any climate, for I find that in the most northern parts of Japan they have very fine Kakis. The finest variety that I know of is the Hyakume, or, in other words, the one pound Persimmon; that is, the fruit will weigh one pound. This kind is found to be the best to grow in the north of Japan. In some of the places where this grows, such as Kosshu, Nicko, Idzsu, Konga, etc., the cold weather commences in October, the snow falls in November, and lasts until March, and sometimes till April, and yet you will find the Persimmon growing and fruiting in these cold regions in all its beauty. Large Kaki trees in full leaf look very pretty, and you can make a very nice seat in summer time under them, as when they get to a large size they have a drooping

form, and when they come into fruit they look very pretty indeed with their beautiful, red fruit lying in amongst the green glossy foliage.

The earliest fruiting variety is the Among. This is one of the astringent kinds, which can not be eaten from the tree, but has to be put up in casks or tubs, and done up perfectly air tight for eighteen or twenty days, when they lose all their astringency and become mellow and sweet. The natives always use for this purpose old wine casks—that is, the Japanese saki tubs. They never put them in new tubs; they have an idea that unless the tubs have been used for wine the Kakis will not be good. I believe, however, that this kind, like all the remainder, if left on the tree until perfectly ripe, would lose its astringency also.

The next that comes is the Zingi. This is a very nice fruit, not large and not so bright a color as the others, and it is very seldom or ever allowed to get soft, for as soon as it gets soft it commences to rot, but it must be ripe before being gathered, or, like most of the other kinds, it will be astringent.

Then comes the Kurokuni, the largest round one, and this must hang on the tree until it is soft; the remainder of the varieties come in about the same time. The Haycheya is the largest oblong fruit, and it is a splendid fruit when ripe, but must be perfectly soft before being gathered. The Die Die Maru is a very fine fruit also, but, like the Haycheya, it must be perfectly ripe before gathering.

There are several other kinds but they are of no importance, for they do not differ from these in the shape or in size, and they are not distinct enough to be recognized as different varieties. The above names are the best varieties in Japan, and they are the only ones I

would advise any one who intends to be a large or small grower to buy or to plant.

OUR WINTER BLOOMING ROSES.

By Mrs. G. E. CHILDS, Santa Barbara, Cal.

The first article I read in the February HORTICULTURIST was on winter roses. The writer certainly did not mean Southern California; I know he never could have got as far as Santa Barbara, and then have written that roses did not bloom in the open air. I have cut roses from my bushes every week, and sometimes about every day, in the winter, for over three years. My garden is now nearly four years old, and has given flowers in all weather, hot or cold, wet or dry. This certainly has been an unusually cold winter, and I have had less flowers from each variety of plants than in other seasons and winters. I have cut Cape Jasmines (*Gardenia*), Tuberoses, Camellias, Carnations, and Tea Roses, a few from each, all this winter. My Camellia blooms were finer than before, but I owe it to the age the plant has attained. My pond lilies are showing new leaves, and my Japan lilies have made a fine growth. Cape of Good Hope bulbs and hyacinths are showing flower stems to-day, Feb. 12th. Heliotropes, and *Hibiscus grandiflora*, bloomed all winter.

My choicest winter flowering roses are headed with Pauline La Bonte; no description can do it justice, for it is the most charming of all the shades of pink teas, and of a lovely cupped shape, and the best of bloomers. For a white rose I find *Devoniensis* unexcelled; such lovely buds, and retains its shape so long. Niphetos is as good, but not so abundant a bloomer. Agrippina is a good red rose. Count de Ure, also red, is good until late in the winter; it rests then a few weeks, but blooms abundantly.

dantly the rest of the year. Saffrano blooms here all the time, also Cels Multiflora, Laurette, and La Pactole. La Sylphide does well if it is a healthy plant; mine is not so good as some of my neighbors'. White Daily merits the name in my garden; it is crowned at each tip of twig with white buds. Bougere, a delicate bronze pink and fine shaped rose, blooms all the time here, and has had not less than half a dozen buds at a time all winter. Marechal Niel gave me about two or three buds per month this winter, but does better in spring and fall. There is one fine pillar rose that seems but little known, and it has what nearly every one wants, a fine red color and fine foliage; the flowers are good shape, compact, and splendid odor—it is the Souvenir de Anselme.

My roses, and other flowers, have been perfect this winter. No disease of any kind has troubled them. I do not owe my good fortune so much to care, as to climate and soil, for I have not given my plants much care during the past year, except every three months liquid manure, and once a month a good watering. I have many other very fine roses besides the ones mentioned, but will not add the names now, as it might make this article too long.

HINTS ON SOWING SEEDS.

By FELIX GILLET, Nevada City, Cal.

At this time spring, so full of promise and loveliness, is ready to bless us with its myriads of fragrant blossoms. In every little household of floral or horticultural affections, the head of the family, and his tasty wife, are thinking about what they will do this year in the garden, one to adorn the front yard with pretty flowers, the other to have the vegetable patch filled with substantial plants. A few suggestions, there-

fore, on the sowing of seeds may be welcomed by many, though to that class of people of limited experience, who are just starting a garden, these lines are more particularly addressed.

To meet with success in growing seeds, two things are absolutely required—the seeds must be fresh, and they must receive the proper treatment. Sometimes seeds are gathered in the garden, but more often they are bought from a seed store. If seeds are gathered on the place, they have to be picked when fully matured, and, if not quite dry, put to dry in the shade, and kept in their envelop or pods, as long as it is practicable. Certain seeds, however, lose their germinating power very fast and have to be put in the ground at once, or in sand in the cellar till spring; they are mostly the seeds of trees, like acorns, nuts, tea, beech, etc.

The best soil for flowers and seed beds is a mellow loam, containing sand enough to prevent the surface from baking, either after watering or after a rain. But often we have to use the kind of soil that it has been our lot to settle upon, and do the best we can with it. Wherever the soil is composed of a stiff clay, it can be easily improved by the addition of sand, and well rotten manure, or after the ground has been manured, spaded, and raked, it may be given a good dressing of light loam. Be sure at any rate to have a level surface of light earth on which to sow seeds, for if the ground is rough and lumpy, the seed may be buried under the clods and never grow, and others will come up and perish for want of a fit soil for the tender roots.

Certain flower seeds will come up without any trouble, and in the open ground. Others do better to be sown in a hot-bed or simply in a box which can be covered with a sash or sheltered,

in case the weather grows cold and stormy, and then afterwards transplanted. Here is a list of flowers that it is always better to sow in that manner and transplant when of a proper size; flowers, too, that I would advise persons having a small garden, and not the experience required for a judicious selection of flowers, to select, viz: Aster, Pansy, Browallia, Pink (Carnation and Picotee), Sagetes, Petunia, Phlox, Ten Weeks Stock, Zinnia. If only a few plants of each kind are desired, better sow the seed very thinly, and such as Pink, Stock, Zinnia, Phlox, one single seed at a place; or else the plants may be thinned out when one inch long, which has to be done with great care; always water after thinning out. The beds have also to be kept free from weeds.

No matter how small the seed bed is, sow in drills at least four inches apart, so that when it is time to transplant, all that has to be done is to take the plants up one at a time with a little garden trowel or the blade of a knife or a piece of tin, but in such a way that a sod of dirt is taken with the plants; it is then set out in the flower bed, in a little bit of a hole, and where it is desired to have it remain and flower. Before transplanting, and wherever the soil is rather poor, or the ground for one reason or another not manured, or only a little manure is to be had, I would suggest to first dig up a space one foot square and as much deep; throw a good spadeful of manure in the bottom; fill up with earth, and set out the young plant from the seed bed; then mulch the ground about the newly set out plant, and water. In this way not one plant will perish, hardly wilt even, and it will make a luxuriant growth if watered through the summer. This I have fully tested on my place whose soil is com-

posed of the red clay of the mountains.

As a general rule flowers of all kinds require a good soil and plenty of water; if the soil is poor have it manured well; if manure is scarce, use it as described above right where it is the most needed, for in this way a wheelbarrow load will do where a wagon load otherwise would be required. Some flower seeds can very well be sowed in the open ground—as *Cacalia*, *Candytuft*, *Nemophila*, *Catchfly*, *Calliopsis*, *Cassia*, *Centranthus*, *Larkspur*, *Eutoca*, *Linum*, (Red and Blue), *Mignonette*, *Nigella*, *Scabiosa*, *Sweet Pea*, *Convolvulus*, *Sweet William*, etc. All the above named flowers I would recommend as a most beautiful selection of flowers of good colors, and of easy growth. *Mignonette*, *Larkspur*, and *Candytuft* do not stand transplanting well, unless a sod of earth is taken with the roots. *Mignonette*, *Larkspur*, *Candytuft*, *Centranthus*, *Nemophila*, *Scabiosa*, can be well sowed in the open ground in the fall; but when flower seeds are sown in the spring or summer, whether in hot beds, cold frames, boxes, pots or open air beds, the ground must be kept constantly moist; this is of the first importance. If the sun is too hot, the ground can be shaded either with a covering of board or evergreen boughs, or simply papers kept in place with a few rocks. Fine seed, like that of *Petunia* and *Browallia*, has to be covered with very fine soil. The best way is to sift it upon the seeds. Some horticulturists have given for a rule that seeds must be covered twice the depth of their size; this is far from being correct, for instance radish and turnip seeds have to be sown right on the surface and rolled, and a cocoa-nut, which is five inches in diameter, does not require to be covered by any more soil than does a grain of wheat, or about half an inch.

I will conclude by advising people to sow in their gardens the beautiful blue *Nemophila*, a native of our State, and which can be sown from October to May. In small round beds, or at the angles of triangular beds, it looks very pretty in early summer, the ground being literally covered with its blue flowers. The seed has to be sowed quite closely, so that the plants, when grown, will completely cover the surface of the ground.

OUR FLOWERS.

By B. F. ROBERTS, Shasta Co., Cal.

I believe the best humanizing elements of life's experiences are found in flowers. Wherever I see a tasty doorway, set with plants showing watchful care by their sprightliness and sturdy growth, I mark that house as a happy home. The collection may not be extensive or rare; a climbing rose, woodbine, or convolvulus over the door, with a few balsams, gilly-flowers, zinnias, begonias, pinks, and pansies lining the smoothly graveled walk leading to the house. To these flowers we might add a canna on one side, opposed by a monthly rose of color less pronounced, to keep watch and ward over their humbler sisters. Near the gate we might place some double altheas to nod a welcome to the entering guest. Passing through to the threshold, one would naturally expect a few geraniums in boxes, with a hanging basket of wandering Jew or smilax, to shed fragrance and freshness within doors. It is not necessary that these plants and bits of color be arranged with mathematical precision to secure the pleasure of the owner; yet an artistic disposal certainly enhances the satisfaction they yield.

We seldom reside longer than six months in one place, yet our first care, on finding ourselves established, is to

secure a variety of plants. A few hardy perennials we manage to crowd together in a small box and take with us. Additional boxes are easily procured, and our pets show their gratitude by a vigorous growth and a profusion of blooms. With no expense and little trouble our rooms are bright and cheerful, and each member of the family is made better and happier for them. Even our babies love and caress our flowers, never offering to break or spoil them. One little boy, who sleeps beneath the sighing pines of the Sierras, loved a white petunia better than even more showy blossoms. He would caress the leaves and blooms tenderly with his little fingers, and talk to and of them for hours. In his last sleep he clasps a few of his favorite flowers to his breast, and on his grave we placed the plant as a tribute to his memory.

We have another merry boy now to fill the house with laughter, and although but two years old, he takes an interest far beyond his years in the transplanting, watering and cultivation of our plants; and I doubt not he will grow a wiser, purer, and happier man from his love of nature's gems.

As I write, (Feb. 11th,) our whole collection, by no means a limited one, shows the reviving influence of spring. A Bleeding Heart (*Dicentra spectabilis*), during the past two weeks, has made a miraculous growth, and bids fair to bloom in another week. A white begonia, a petunia, and a monthly rose will keep it company, while one or two geraniums will not be far behind. A box of *viola odorata* (sweet violet) has filled the house with fragrance through the winter. Without our flowers our home would be bare and cheerless indeed.

A POT of jonquils makes a delightful window ornament.

WOODWARD'S GARDENS.

By CHARLES H. SHINN.

This charming resort has been written up from almost every standpoint save and except one purely horticultural. So, on the last visit, we shut our eyes to the attractions of the marvelous museum, we refused to visit the aviary, we bought no peanuts for the monkeys, and we took no underground trip past the aquariums. Armed with that dangerous combination—lead pencil and blank paper—we hunted up Mr. Schuman, the head gardener, received a roving reportorial commission, and set forth on a tour of discovery.

Everyone who has visited Woodward's must, it seems to us, have noticed the two large Bananas, in the central dome, south of the art gallery. A Banana leaf is a revelation; tender, flowing outlines, and shades which blend as a dream are here. Yet it is the most helpless of all creatures; the lightest breeze ribbons it, the rain beats it down, the frost kills it. You will observe in Norton Bush's tropical scenes how every Banana he paints is forlorn, and shattered by rain and tempest. These, which grow under glass, are preferable.

The succulents, growing on the grotto work, are thrifty as possible, but hardly offer sufficient variety. Succulents are becoming immensely popular here, and we learn with pleasure will be used much more in out-door work at these gardens.

The *Philodendron pertusum*, growing in the west wing of the large conservatory, is a glorious plant with massive leaves of the quaintest form and growth. The oddity of these leaves, often two feet wide and three feet long, consists in the deep sinuses extending nearly to the midribs, and in the curi-

ous window-like round or oval openings in the substance of the leaf. It is the only plant we know of which possesses this strange characteristic, and yet we doubt not that of the thousands who have passed it in the years gone by, hardly one has observed this peculiarity. This plant also sends out large fleshy air-roots, which cling to the trunk of a tree used as a support, or swing aimlessly and forlornly in the air. It has an immense white calla-like flower a little later in the season.

The finest specimen of *Alsophila excelsa* to be found in the State is growing in the same house. Its width from the tip of one of the stately, curving fronds to the tip of the opposite one is, we should judge, about fifteen feet. The new fronds, enveloped in brown woolly fibres, are uncurling themselves in that caterpillar-like method pertaining to Ferns. Fern leaves have, you know, an odd habit of unpacking themselves and revealing their beauties after they reach daylight. It is the old story of the fairy who tested her lover by coming to him first with lowly attire and hidden face, and then, dropping the tattered cloak, became the fitly-clothed queen of woods and waters, birdland and summer skies.

In the northwest range of houses, mainly filled with blooming plants, the masses of *Hyacinths* attract the eye. These are essentials to the February and March conservatory in California. Close by the entrance stands a fine pot-plant of *Goldfussia Alsophila*, in full bloom, with its pale lilac, tubular flowers, borne in pairs in the axils of the leaves. We noticed a fine collection of *Epiphyllums*, embracing among others the following, mostly in bloom: *E. rubrum*, *E. cruentum*, *E. Bridgessi*, *E. salmonium album*, *E. tricolor*, *E. Bucherianum rubrum*. These are graft-

ed on *Pereskia*, the best stock for *Epiphyllums*. Here is also a fine assortment of variegated *Agaves*, *Yuccas*, and *Dracenas*. The centre stage of the house is occupied with *Begonias*, *Justicias*, *Ficus*es and *Palms*. One side exhibits a healthy lot of *Cinerarias*, a most popular plant at this season. Some further succulents we observed here were: *Apicra spiralis*, with fleshy, finger-shaped, pointed leaves rising in circles around the stem; *Apicra cericusa*, with small white dots on the leaves; *Aloe retusa*, in bloom, whose fleshy triangular leaves are equal in length, breadth, and thickness, and grow at such an angle that the top of the plant is as level as a floor.

In the next house we notice a few *Chamedoreas*, with white rings about the stems, and ribbed compound leaves. The *Latania rubra* has suffered from the cold weather, or some other cause unknown, and does not look as well as when we last saw it. *L. aurea*, which forms such a fine contrast to the preceding, is entirely prosperous. Here is a splendid specimen of the well-known *Pandanus urilis*, (called the Screw Pine), which has fairly filled the house, and will probably be one of the first plants to be moved into the new tropic house. The stem of this *Pandanus* is nearly as large as a man's waist, and it is worth while to see the massive roots which descend into the ground. The leaves, which we hope everybody has seen, or will see, ascend in that perfect spiral which at once bewilders and fascinates the eye. It is, as it were, the example and despair of all architects of winding stairs. Who shall surpass, or even equal, this interlinking of graceful curves, though he be artist and architect in one, and commissioned by royalty?

Pritchardia Martii, with its white,

frost-like stems, and *Oreodoxa regia*, with its narrow leaflets, are other attractions. The *Cycas revoluta* covers a large circle, and the reddish, pointed cone of the developing leaves in the centre is worth a moment's study. Here are the red fibres for warmth and protection; the coarse outer scales; the sharp points projecting upward; the air of secrecy, reserve, and content. This *Cycas* is a stubby, solid plant, with a way of its own.

The *Caryota urens* has leaflets like the fin of a fish, if anything so delicate, smooth, and elastic as these leaves could for a moment be compared with that spined organ of locomotion. *Til-lancia pyramidalis* is new here. *Ficus Eburneus* is loaded with fruit—yellow, brown-dotted figs about the size of a man's thumb nail. *Musa zebrina* shows with peculiar brilliancy the markings from which its name is derived. The *Areca*s, *Sabals*, *Brahea*s, *Pritchardia*s, and *Carica*s are all in good condition, and well worth a visit.

Orchids in bloom now are *Lycaste spinosum*, yellow and brown; *Oncidium Cavendishi*, chiefly yellow; *Odon-toglossum Rossi*, pink and brown; *Lycaste cruenta*, two shades of yellow; a number of *Lælias*, etc.

The stove house shows several large *Nepenthes*, or Pitcher plants, with their leaves which narrow into tendrils, and widen again into the hanging, lidded cups, from which thirsty monkeys are said to drink. One or two of the *Nepenthes* show spikes of small, brown flowers in which the pistils are most prominent. The new leaves exhibit the successive development of the "pitcher" in the most interesting way; first a wire-like prolongation of the leaf, then a swelling at the tip, and a twist in the green wire, then a decided bulge, growing hollow, and larger

daily—it is quite a history. Here, also, are Anthuriums, Crotons, some good Dræcenas, such as *tissellata*, *Cooperii*, quadricolor, *ferrea*; and a remarkably pleasing plant with shield-like leaves, called *Brunsfelsia Americana*.

The grounds next claim our attention. The graceful *Ulmus Americana pendula* (weeping elm) is budding forth. This is a most desirable tree for private grounds. *Araucaria Bidwillii*, from Morton Bay, is, in our opinion, the best of the *Araucarias*, and is not surpassed by any other conifer. It is a tree of infinite grace and variety. *Thujopsis dolobrata*, a native of Japan, is another tree well adapted to nice grounds. The flat, bracted branchlets show some yellow markings above, and white underneath. It droops sufficiently to be graceful and is of a sturdy growth. A large specimen of Irish Yew reminds us that it is the most handsome columnar tree in existence. It is a pity this can not be everywhere planted instead of the Italian Cypress. We have not time to speak of the Beeches, Birches, *Aacias*, *Melaleucas*, *Crætaguses*, choice conifers, and other trees and shrubs which decorate the grounds. The custom of plainly labeling them is highly commendable. The public is thus educated into a more exact knowledge of plants.

Some very important and interesting changes are to be made during this summer. In the first place, a new and large tropical house is to be erected in the space between the art gallery and the museum. It will touch, on the south, the east wing of the main conservatory. Mr. J. Clements, the architect, showed us the plans, specifications, etc., and we are indebted to him for information on the subject. The floor dimensions of the new conservatory are to be seventy-six feet by seven-

ty-four feet. The central portion will be thirty feet high, and the wings sixteen feet. The style of roof will be curvilinear; ventilation perfect; heating apparatus on Hitchin's system. The main entrance will be at the east end of the building. There will be another entrance in the northwest corner from the art gallery. This house will be used for tropical plants of large size, which have been crowded beyond measure, and need room for fuller development. At the western end, against the art gallery, a rockery will be made extending nearly the whole width, and almost to the roof. There will be winding steps, grottoes, water flowing down and passing out of sight; and also alpine plants, ferns, cacti, various succulents, and vines growing over it. The more we think of the idea, the more we like it. That is, we hope we shall like it when it is finished. The beauty of an alpine garden depends almost entirely upon the "make-up." (It is a little like a magazine in this respect.) The fragments of rock used may be just right, but they must be so placed that they seem as if they belonged there. And then comes the planting. A stiff, unnatural, badly planted rockery is worse than useless—it is in some sense a crime. But of that embodied beauty of rocks and streams, vines and flowers, which an alpine garden may become, who shall venture to approach with futile words?

The grounds will, this summer, display a more complete bedding system than ever before. The terraces, where the much admired ribbon beds were last year, will be replanted, and carpet-bed work in the latest style will occupy conspicuous portions of the grounds. We shall note this year everything of interest in the horticultural line at these Gardens.

CULTIVATION OF NATIVE BULBS.

By J. B. HICKMAN, San Juan.

It would surprise most people to see how well many of our native bulbous plants bear cultivation, not only in beds but in pots and boxes.

Circumstance, in the guise of gophers, compelled my adoption of old cans and boxes for the protection of such bulbs as I wished to cultivate, and eventually they strayed into the pots of the greenhouse as well as in all the garden beds, giving me good opportunity to judge of the effect of the various soils and cultivation upon them.

The first stray I particularly noticed, was a blue *Brodiaea congesta* in a box of lilies. *Brodiaeas*, by the way, are not particular as to soil; they seem suited with anything, but repay generosity with interest. The plant mentioned repaid its care in blooming before its wild friends, and then sending up three more large clusters of bloom and two or more smaller ones. The stems were not as tall as the average, but the flower clusters were larger and formed a bouquet for months. The contrast between this plant and a white variety is very vivid, especially when placed by a box a foot square containing over one hundred of the dazzling crystal heads.

Space will not permit mention of all the surprises of the past season in this connection, but I will mention a box of mixed bulbs, sunk in the soil in an out of the way corner, to show its colors. Passing near it one day I was astonished by the enormous size of some blossoms of *Calochortus venustus*, four inches across, on stems over two feet high and five seed pods and blossoms on a single stem. Judging from the seed pods they must have bloomed two months. Not the least remarkable is the fact that

these bulbs did so well in a light soil when their native soil is very heavy. The ripened bulbs were very large and fine. Near this box was a row of *Tritelia baxa*, which for two months maintained a solid mass of bloom eight inches wide the length of the row.

Often having a mixed lot of bulbs, I have thrown them into pots of plants where they could do no injury. One box, containing an *Amaryllis*, was a thing of beauty for months, *Liliorhizas*, *Calliproas*, and *Tritelias* predominating, but all doing well, except that there was a little paleness in color caused by excess of shade. Had I allowed the soil to become drier and given more sunlight probably all would have bloomed.

Although many of our bulbs will grow with standing water over them, they seldom bloom till the soil becomes quite dry. With the exception of lilies, of some thirty varieties of bulbs I have tried all seem to do well in any well drained light soil, but bloom best when the soil is allowed to become almost dry.

HOW TO BUD THE ORANGE.

[The following remarks on budding the orange are taken from Mr. T. W. Moore's hand-book of Orange Culture in Florida. We have read nothing of equal value on this important subject, for many a long day. A review of Mr. Moore's book will be found elsewhere. —ED. HORT.]

Where it is the purpose of the orange grower to bud his trees it is better that the budding should be done before the trees are taken from the nursery. The reasons are, first, the sooner in the life of the tree the budding is done the sooner and more thoroughly the wounds will heal; second, the budding is done with greater ease and rapidity in the

nursery than in the grove; third, in transplanting trees of considerable size it is impossible to take up all the roots, and, as it is necessary that the top should not exceed in proportion the roots, the tops must be cut back considerably.

A good time to begin to bud is when the trees are one year old. [Two and three year old stocks are preferred in this State.—ED. HORT.] By budding every alternate tree the budded trees can be set the following season, leaving greater space for larger growth of the trees left in the nursery. Those remaining can be budded when two years old, and set the season following. Where trees are to be bought from the nurseryman it is preferable to plant trees older than one or two years, as older trees come into bearing sooner. But where persons are growing their own stock, the sooner they are set out after the first year the more rapidly they will grow, if well cultivated.

In budding nursery stock but one plan, that of inserting a single bud, is practiced. The graft has not done well. Grafted trees will live, but they do not grow so thrifty as the budded tree. Grafting is resorted to when one wishes to preserve a new variety of which he has obtained cuttings in winter. Sprig budding is not resorted to for nursery stock, as the stem is usually too small to admit the sprig. Do not attempt to bud except when the sap is flowing freely, so freely that the bud will readily lift the bark as you push it downward into position. The stock to be budded should be trimmed so as to have as few as possible branches or leaves in the way of the operator. This trimming should be done several days beforehand, so that the wounds may be in a healing condition, and the flow of sap not checked by too much cutting at the

time of budding. The budding knife should be so sharp that it will cut through the hard wood of the bud without splitting the fibre of wood or bark.

Select buds from healthy and vigorous trees of the variety to be propagated. They should not be too old, or they will be slow in starting, nor too young, lest they perish. [We have known buds which were too mature to remain without starting for one or two years.—EDITOR HORT.] The buds to choose should be nearly, but not quite, mature, taken from the branch between the angular and the round form. Select buds with well developed and perfect eyes. In cutting the bud do not hold the blade of the knife at right angles with the branch, as, in such a position, it is liable to follow the grain of the wood in and out, so giving an uneven surface to the face of the bud. The face of the bud should be so level that when pushed into its position the cut surface should touch the wood of the stock at all points, and so exclude the air. To prevent any irregularity of surface hold the blade of the knife firmly in the hand, and almost parallel with the branch. In cutting draw the knife towards you, as the cut will be smoother than if the blade were simply pressed through the wood. The knife should be inserted half an inch above the bud, and come out a half or three-quarters of an inch below.

It is better to insert the bud on the north side of the stock. The incision in the stock should be made with a downward cut, and about three-fourths of an inch long. At the top of this incision make a cross-cut. Each time cut only just through the bark. With the point of the knife, turning the back of the blade to the wood so as not to dull the edge, raise the bark at the top of and on both sides of the first incision,

so as to enable you to insert and push down the bud. If the sap is flowing freely the bud in its downward motion will easily lift the bark, and, as it takes its position, exclude the air from beneath it. After the bud has been pushed partly down with the fingers place the blade of the knife one-fourth of an inch above the eye of the bud, and perpendicular to the line of the first incision, press the knife through the bark of the bud, and, by a downward motion, force the bud down till the knife comes over the second incision. Tie in the bud with strips of cloth, or, better still, with strings of woolen yarn, which are somewhat elastic. In tying, do not bring the cloth or string in contact with the eye of the bud. So wrap as to hold the bud firmly in its place, and to exclude the rain, if any should fall soon after budding.

Revisit the buds in eight or ten days. If they are living, take the wrappings from that part of the bud below the eye. The wrappings above the eye may be loosened, but left a little longer. When the bud has taken, cut off the stock three or four inches above. As the bud grows tie it to this upper part for support. When the bud has made a good strong growth the stock may be cut down close to it.

Before we leave this subject, attention is again called to the importance of having the top of the bud fit neatly against the bark above. The law governing the growth of trees is this: The sap, passing upward through the pores of the sapwood, is elaborated by the leaf. The sap must enter the leaf, and absorb carbon from atmosphere, before it is ready to make new wood. It then descends, and partly evaporates through the pores of the bark, and the thickened sap makes a deposit along the line of its descent, which presently

hardens into wood. It is this fact that new wood is mainly formed by this downward flow of sap which makes it so important that the top of the bud should come in close contact with the upper bark. Placed thus it is in the line of the direct current of life, but otherwise it is entirely dependent on laterel circulation or absorbtion.

Correspondence.

[The editor of the CALIFORNIA HORTICULTURIST cordially invites all persons interested in any branch of horticulture to send practical questions and notes of their own successes and failures. A brief, unadorned statement of events in one little garden may often prove of universal interest. Short notes from busy people, all over the Coast, will make this Department fresh and valuable.]

A SANTA BARBARA ROSE GARDEN.

Mrs. N. W. Winton, of Santa Barbara, writes to us from her beautiful garden, which we well remember, and gives us the following notes about her favorites :

As you ask contributions from amateurs on the Rose question, I will send some items, having had the Rose fever for years, with no prospect of abatement. Having frequent occasion to send clubs and watch the success of different varieties in our climate, I keep a set of lists—the best six, dozen, twenty-five, etc. The following I consider the best dozen : Dark (red) Duchess of Edinburg, Archduke Charles, Agripina (yellow), Perle de Jardin, Safrano, (climbers), Chomatella, Marechal Niel (pink and pink tinted), Duchess de Brabant, Marie Van Houtte (white), La Marque, Madam Rachel, Cornelia Cook. These give entire satisfaction.

Saturating the ground thoroughly once a month, and showering the dust from the leaves twice a week, or more if much exposed, with abundant winter pruning, can not fail, in this section, to give a large supply of fine roses. The

latter operation I force myself to set a day for, and make it as I do for the dentist, a matter of conscience, or my courage would fail me as the fine tops, from one to two feet on standards—and proportionably in climbers—fall under the tonsorial shears. And yet all the old wood from the bottom, and the aforesaid head from the new, *must* come off to make perfect roses. As these are planted as a border to the lawn, and only three feet apart, I leave only two or three stalks. We had so many roses that until the 25th of January I could not find the courage to encounter a garden “all shaven and shorn,” then a three day’s rain saturated the opening buds, though I usually do it in December to save the heavy growth from swaying in the storms, in spite of stakes. So trimmed, they will dispute the right of way by midsummer, and the Pelargoniums (another specialty of mine) will meet them half way. These denizens of the soil evidently look upon us as assuming squatter sovereignty, and having no rights which they are bound to respect.

I have recently received a number of Pelargoniums from John Saul, of Washington, D. C., who makes a specialty of them, selected from his recent European importation. If equal to their reputation, I will report them for the HORTICULTURIST. I have seen no frost in our grounds this winter, though some has been reported on the low grounds near the bay, therefore our blooms have been abundant. My Magnolia mislaid its almanac and bloomed in December. Heliotrope, Diosma, Laurestinus, Fuchsias, Jasmine, etc., have done quite as well as usual.

Oranges and Lemons never looked better. I will add one item concerning the culture of the Marechal Niel. It is a thriftier plant budded on a strong

grower than on its own root. Give it the cooler side of your veranda; mulch and manure; water in abundance—a barrel filled one-fourth with old manure and filled up with water is a grand rose adjunct; one quart in six of water is a safe rule, and will give you a fine runner of ten to fifteen feet from a well rooted plant. There is much complaint here of this rose under ordinary culture, and it also does poorly if trained on wire, as the sun heats it too much, and it is worth some study to bring this fine rose to perfection. We have two standards that are nearly as fine, however—Perle de Jardin and Perle de Lyon, and I am throwing out the inferior sorts and replacing them with these. I think the Pauline referred to is Pauline La Bonte, one of our best tea roses. The old Pauline is a hybrid perpetual, and so not a constant bloomer. The Niphetos is also giving excellent results in white, and Adam in pink; but our best pink is the Duchess de Brabant, taking all its qualities into consideration—a true sea-shell pink, and good in bud or bloom. Devoniensis is also a standby, never failing a week in the year until trimmed.

The Hardenbergias are in their glory now, both white and purple. We could have cut the bereaved Oaklanders plenty of Christmas roses; they have our full sympathy in the despoiling of their beautiful gardens.

Santa Barbara, Feb. 12th, 1879.

ROSES IN EAST OAKLAND.

EDITOR HORTICULTURIST—Dear Sir: As your readers from various sections have been giving accounts of the flowers they still have blooming outdoors in this unusually cold winter, perhaps our experience on the Brooklyn hills may not be uninteresting.

First then as to roses, as they seem

to be especially noticed: various gardens in this neighborhood have had roses of various kinds blooming all winter without any shelter, or care of any sort. Unfortunately I can not give the names of the different varieties.

Of other flowers, we have had in our own garden Japan Pinks (*Dianthus Heddewigii*), Carnations, Pansies, Penstemons, Double Stocks, Verbenas, Geraniums, Pelargoniums, Heliotropes, and Lantanas. The latter I must admit are rather poor specimens, the plant having suffered considerably from frost, but one heliotrope has escaped and still keeps on blooming almost unharmed, regardless of chilly nights and wet days.

In the vegetable garden many tomato plants are apparently ready to go on growing with returning warmth; one is even now ripening fruit.

Can any of your readers suggest anything that can be done for rose bushes, the flowers of which decay when the bud has reached nearly its full size, and should open in a day or two? I have a *Reine du Portugal*, received from the East in the fall of 1877, which has never opened a flower, though producing plenty of fine buds, and a *James Sprunt*, bought at the same time, which grew from about six inches to as many feet in height by the middle of last summer, but produced no buds till the fall, and has opened but one or two, all the rest decaying unopened. It still hangs tolerably full of buds, but none look as if they would open. Neither plant has ever suffered any from mildew, or insect enemies.

James Sprunt stands in rather a damp place, but *Reine du Portugal* has a well drained place not very distant from other roses blooming finely. Both of them seem such fine flowers that I do not feel like digging them up and

throwing them away if any less "heroic treatment" will be of any use.

Yours truly,
G. W. H.

East Oakland, February 22d.

AVENUE TREES.

EDITOR HORTICULTURIST.—Sir: Two years ago we set our avenue with Blue Gums on two sides, and Pepper trees in the centre. Having become disgusted with the Eucalyptus, we are looking for an ornamental tree with which to replace it. Do you know of any evergreen tree that you think will suit our purpose? The "Silver Wattle Acacia" has been spoken of, and we have seen one of the trees which we like, but know little of its nature. Do you think it a desirable shade tree, and would you advise its adoption, or are there serious objections to its use?

Yours truly,
A. S. WHITE.

Riverside, San Bernardino Co.

This is evidently an avenue of considerable width, and deserves to be treated in a permanent way. Here is an opportunity for our correspondent to plant trees which will be glorious and living creatures for many years, and will bless his descendants, and help to educate the community to a clearer sense of the beautiful.

There are many valuable and stately trees, but after all the choice will soon narrow to a few of pre-eminent merit. Let us begin and ask our questions. Shall this avenue be of deciduous or of evergreen trees? The Pepper trees, we understand, are to remain; but which class of trees are preferable for the sides? The nut-bearers take the lead among deciduous trees adapted to his purpose. Walnut, Butternut, Italian Chestnut, and Pecan make noble trees, and, when they begin to bear,

will add something to the profits of the place. For other deciduous trees we refer to an article in our last number.

The best coniferous evergreen for the purpose would be the grand *Cedrus Deodari* (or sacred Himalayan cedar). This is the tree used on the middle terrace of the State Capitol grounds at Sacramento. It is a rather costly tree; but it is well adapted to our climate, and has no superior in the points of beauty and permanence.

If we conclude to use a broad-leaved evergreen, the very best one will be the *Magnolia Grandiflora*, and this particularly for the southern counties. Those who have enjoyed the pleasure of a visit to Galveston or New Orleans at the season of *Magnolia* blossoms will remember the glories of this, the pride of American trees.

Some of the *Acacias* are very graceful trees, but they are often subject to disease, and, we apprehend, would not contrast so well with the *Pepper* trees as would those we have mentioned.—
EDITOR HORTICULTURIST.

CLAPP'S NO. 22 PEAR. — Your correspondent, E. J. Hooper, in the February number of the *HORTICULTURIST*, evidently gets Clapp's Pears a little mixed. Your cut doubtless represents Clapp's No. 22, or Frederick Clapp, a cross between *Beurre Superfin* and *Urbaniste*, and altogether a different pear from Clapp's Favorite, an older and now well known large pear — a cross between *Bartlett* and *Flemish Beauty*. Messrs. Clapp of *Dorchester*, near Boston, Mass., have made seedling pears a specialty for many years, and at the meeting of the American Pomological Society in Boston, in 1874, they showed many bushels of fine looking seedlings of many sorts, including seedlings from Clapp's Favorite, that were very like their parent, ex-

cepting in being more highly colored and ripening later.

E. Y. TEAS.

Dunreith, Ind., February 17th.

OREGON CRAB—*PYRUS RIVULARIS*. — This is said to be a very ornamental shrub, and is now offered by the European nurserymen at a very low price. You can supply yourself with plants from abroad, if you can not find the plant in your home nurseries. It is not very flattering, but not unusual, to find our common and valuable native plants better known and more highly prized in foreign lands than at home. Let the Arboretum be established, and collect every valuable and beautiful plant of the Pacific Slope, and give it a home there, and you will have something that California may well be proud of, and that plant lovers will make long pilgrimages to see.

E. Y. TEAS.

Dunreith, Ind., February 17th.

A business letter from a very intelligent gentleman of Ukiah, Mendocino County, mentions the fact that winter apples keep fully a month later there than the same varieties in Alameda County, and men are planting orchards of the best late apples so as to have them in bearing by the time the railroad gets up there. He states that in the northern part of the county the fruit keeps still later. A dwarf orange tree, which his daughter planted last year, has stood the cold weather without injury. The large English gooseberry does well, and he has planted out some eighteen hundred. He has found that some of his cherry trees, after a few years of rapid growth, died. This, we think, is because they were on too wet land. The soil must have good drainage, and carry off the surplus moisture easily.

EDITOR HORTICULTURIST:—The Eastern folks have come to regard all Californian wonders as mere exaggerations. We are not given to self-laudation. Now and then some Eastern tourists, that happen to scale the snow-capped Sierras, and descend into the fertile valleys of our "glorious climate," and find our beautiful smiling gardens decked with all the rare and exquisite flowers that adorn the face of this terrestrial sphere, can not help writing in praise of the wonders that they behold; and they even exaggerate a "little mite," and then we favored creatures are censured by the frozen denizens of the Atlantic side as being the greatest falsifiers in existence. In fact, as it is plainly seen, their own citizens are the to blame. If we should state that during the most severe weather we have experienced this winter Hollyhocks, which are supposed by all to be out of season by the close of autumn, were in as full perfection as if it were only summer, we would be classed with the above.

During a visit in the early part of January to the grounds of the Deaf, Dumb and Blind Institution, near Berkeley, we saw some fine specimens of these plants in full bloom. The stalks were some four feet high, and the upper two feet were one mass of bloom; the flowers were full and double. These plants were in a border on the west side of a Monterey Cypress hedge, and we believe that the ground was so dry during the summer that, when the moisture began to rise in the soil late in the autumn, the plants sent forth flower stalks, and the early rains hastened them and the genial weather that followed up to the middle of December brought out the large spikes of flowers that were the admiration of all.

W. A. P.

A NOTE FROM PETER HENDERSON.—Peter Henderson, the well known florist and seedsman, says, in a note recently received: "I am in receipt of your FLORAL MAGAZINE for February, and allow me to say that I was surprised to find how well you can do such things by the far off Pacific. It will bear favorable comparison with anything of its size in the East. I am glad to see that Mr. James Hutchison, one of my old friends of a quarter of a century ago, is a correspondent. I am surprised at the number and versatility of your writers, usually the great lack of our horticultural magazines—for no matter what the knowledge or ability of the editor may be, it is after all the correspondence to horticultural magazines that gives them the necessary freshness."

New York, February 25th.

THE LOQUET (*ERIOBOTRYA JAPONICA*).—Quite a number of these trees are distributed in the gardens of Sacramento City, and a few are to be found on scattered farms over the plains. The tree is an evergreen with broad, spreading branches. Its peculiarity consists in its blooming in the dead of winter, thus presenting a marked contrast to the surrounding trees. Although semi-tropical in its nature, it is observed to stand a greater degree of cold than most of that class. The fruit ripens in April and May. It is a profuse bearer, and is readily propagated by seeds and cuttings.

GEO. RICH.

A WEED may be defined as a plant that one does not want.

GREAT SALE.—A bee-keeper in England, wishing to change his business, advertised "an extensive sale of live stock, comprising no less than 14,000 head, with unlimited right of pasturage."

Farm and Orchard.

FARM NOTES FOR APRIL.

And what is there of pleasure, of hope, or of slow hard toil for this, the poet's month of changes; this, the May of California? It is glorious, sunlit weather everywhere; whatever music lay hidden through the days of rain is shaken loose in bird-song, and yellow tresses of the willows, and tremulous grass blades on many a wide hill's breezy slope. We must live out-doors as much as we can this weather. The hero-nations were not housed up folk. In these glad days we think, also, of the nymphs and dryads, of wood-creatures and rills half-human, and sylvan retreats. So we go out in garden or on lawn, to labor with a renewed strength and carry out our plans with a renewed energy.

Summer-fallowing is the one pressing need of this month in many of the interior counties. The teams must be kept at work breaking up the sod, or old pastures now, before the moisture is all dried out. To those who do not understand our system of fallowing, we will say that it consists in breaking up each year a piece of land which lies exposed to the sun and wind all summer, is dry-sown in the autumn and starts with the first rains. By this method only one-half the farm is used in any given year, crops are safer, and the farmer can do more work himself. All through this month farmers in Sonoma, Solano, San Joaquin, Calaveras, and other counties, will be at work on their summer fallow.

Alfalfa ought to be sowed this month at the latest. Make the soil very mellow, sow good clean seed, thirty to forty pounds to the acre. A practice of sowing barley with the alfalfa has lately sprung up. The barley grows first, pro-

duces a medium yield, and is cut, leaving the way clear for the subsequent growth of the alfalfa. This plan is only successful on good, rich, mellow bottom land.

Tree planting will continue, in some localities through this month, but hardly longer anywhere. The coast counties north of San Francisco have late seasons; in the interior valley, as at Stockton, the leaves are fully out by the 20th of March. Do not neglect to plant at least a few Olives, Carobs, Cork Oaks, Oranges, and Figs. These ought to be on every farm, and all are beautiful trees of great value commercially. If you have a piece of land which you intend shall be planted with trees next year, be sure to plow it now, at least twice, and let it lie fallow. Plow deeply. Subsoil on alluvial soils. Dig the holes in this April weather, letting them be both large and deep, and the action of the atmosphere will make them much better for next winter's planting.

The roads may be rather hard, and rough, owing to the late rains, and the subsequent dry weather. What shall we do? Some people merely wait until the natural wear and tear of travel has worn the road into a passable condition. Now and then there is a large hearted man who puts on a scraper and rubs down the knobs and jagged points in the road, thereby saving much worry.

Some pruning is needed at times, when the trees are in full blossom. The heavier pruning should have been done months ago. This is only a light task, taking the shears, and cutting those branches which have too much fruit setting, or at least shortening them. Much of the after labor of thinning can thus be saved.

The wagons and buggies need to be washed off, and cleansed from the winter's accumulation of mud, which is, or

ought to be, considered quite a disgrace this beautiful dry weather. Vehicles can be repainted, and made ready for summer use. Examine every nut, bolt, screw, and piece of timber. When the work-harness is put away look it all over and repair it at once. When the time comes to plow again, you will not be sorry to have everything in ship-shape.

The wheat fields will hardly need rolling this year, for that is chiefly of benefit in dry seasons, but if the locality is dry this year, do not neglect this precaution, for rolling the ground helps to retain moisture. If wheat is clipped to keep it back, or retarded in growth, it must be done early, for most farmers think the crop is injured, not benefited, by severe clipping.

See to the fences, reset posts pushed over by cattle during the wet weather; nail warped boards back again; put barbed wire on the top of old fences, but do not use it alone.

Fight the weeds; poison the squirrels; keep a succession in the vegetable garden—so shall you prosper and wax fat, and possess the land—and have no real worries in life, but over your broad acres peace shall rest with a year-long jubilee.

SELECTIONS FROM OUR EXCHANGES.

CLEMATIS AS BEDDING PLANTS.—The bed in which they are to grow should be made convex; that is, raised in the centre; for only in this way can the blossoms be displayed to the best advantage. Having made the soil rich with a liberal dressing of decayed manure, set the plants, but not too thickly. As they begin to grow and send out shoots, they should receive attention. They must be looked after weekly, and trained and pegged down as recommended for Verbenas and Nasturtiums, taking pains to train them where most

required to cover the surface. As the plants do not throw up blossoms from the lower portion of the stems, that is, within a foot or so of the roots, the points of one series of plants should be trained so that they will over-lap and cover those portions of the other series which would otherwise remain bare and detract, therefore, from the beauty of the bed. Pegging should be attended to early and often, as they cling so closely together by their clasping leaf stalks, that the young shoots might be injured if they became united and an attempt were made to separate them in order to train them aright.—W. C. L. DREW, in *Rural New Yorker*.

DICHORIZANDRA.—These are beautiful alike for flowers and foliage. There are several species of this genus of spider-worts. They require a warm house to grow in, but with some care good specimens can be grown in greenhouse temperature, and although of only recent distribution in this country, in a good many places there are to be seen good fair specimens of several of the finer kinds. For soil they require a compost of loam and leaf-mold, with a good sprinkling of sand, and during their season of growth a liberal supply of water is necessary for their requirements, and at no time should they be allowed to get very dry, doing best in a moist, warm atmosphere, free from sudden checks from cold draughts and extremes of moisture at the roots. They are most easily propagated by division, but can be raised from seed sown in a high temperature.

D. mosaica.—This is a beautiful species from the tropical regions of South America. The ground color of the leaves is a dark green with irregular transverse lines of pure white, giving them a mosaic and beautiful appearance. The

under side is a deep purple. The flowers are produced in a terminal thyrse of a bright azure blue, and are very attractive.

D. nudata.—In habit of growth this is very like the last, but quite distinct in the marking and shape of the leaves. The ground color of the leaves is a dark metallic green. On each side of the midrib and veins are stripes of lighter green, with transverse bands of white. The undulations of the surface of the leaves give them a striking and peculiar appearance. It is also a native of South America.

D. thyrsiflora.—This plant is of rapid and luxuriant growth, producing in early winter spikes of beautiful blue flowers. The foliage of this species is not so beautiful as of the others described, but for its flowers alone it is worthy of more general cultivation.—M. MILTON, in *Country Gentleman*.

THE big trees of California are big enough to need no exaggeration: Professor Brewer points out two errors that are current about them, one relating to their height, and the other to their age. The "Father of the Forest" is generally said to have been 450 feet high when in his glory. The fact is, no one knows how high it was. When the grove was first seen by white men, the prostrate tree was already part rotten, and the whole top burned away. The highest tree in the Calaveras grove is 325 feet, and the highest in the Mariposa 272. The highest in the King's River grove is 300. As to their age, there is no reason to believe that even the oldest began its growth "long before David reigned in Israel," as people are fond of asserting. One of these trees was felled in 1853, and found to be sound to the core. Its age is known to within a few years, and it began its

growth more than 2,500 years after David died. It is possible that some of the oldest trees of this species may have begun their growth 2,000 years ago, but not at all probable that any reached back to within a thousand years of the time of the Jewish King.

A CALIFORNIAN ORCHARD.—The Oak-shade Fruit Company's orchards near Davisville, Cal., occupy 340 acres, all planted but about 75 acres. The collection of pears is confined mostly to four varieties, as follows: Bartlett (the most profitable), 2,100 trees; Winter Nelis, 6,000; Doyenne d'Alencon, 3,000; and Beurre Clairgeau, 800. The almond orchard contains 6,500 trees of the Languedoc variety, of which 4,500 bore a crop last season of 20,000 pounds. The almond is admirably suited to this locality as it needs no irrigation, and is exceedingly thrifty. Forty-five acres are set with Muscatel grape vines, for the purpose of raisin-making; several acres are devoted to the cultivating of the apricot, the larger portion being the Moorpark variety; and there are a few acres of figs. The small grove of lemons look well notwithstanding they were somewhat injured by late frosts. These orchards are models of clean culture and careful pruning.

LOBELIA CARDINALIS.—This old plant, now seldom seen in quantity, has a splendid effect when grown in groups or lines in the herbaceous border. At an old place on the west coast of Wales I observed a number of plants mixed with Pentstemons, having a splendid effect. The Lobelia's color is unique, and when used as a back line nothing in its way can surpass its brilliancy. When returning on my homeward journey I called at the garden of Powis Castle, where I saw *L. cardinalis* in per-

fection. In the long herbaceous borders, this plant is growing in circular groups, at equal distances, of about ten or a dozen plants in each group. The effect is excellent—Pentstemons, Phloxes, and other contemporary flowering plants are in harmony with the *L. cardinalis*. Circular specimens of *Clematis Jackmani*, at equal distances in this border, were also very telling. The arrangement of these hardy plants on the terraces of this grand old place makes a most favorable contrast with the ordinary bedding plants, and is much in character with the ancient buildings.—M. TEMPLE, in *The Garden*.

A CHAPTER ON STINGS. — The pain caused by the sting of a plant or insect is the result of a certain amount of acid poison injected into the blood. The first thing to be done is to press the tube of a small key from side to side to facilitate the expulsion of the sting and its accompanying poison. The sting, if left in the wound, should be carefully extracted, otherwise it will greatly increase the local irritation. The poison of stings being acid, common sense points to the alkalies as the proper means of cure. Among the most easily produced remedies may be mentioned soft soap, liquor of ammonia (spirits of hartshorn), smelling salts, washing soda, quick lime made into a paste with water, the juice of an onion, tobacco juice, chewed tobacco, bruised dock leaves, tomato juice, wood ashes, tobacco ashes and carbonate of soda. If the sting be severe, rest and coolness should be added to the other remedies, more especially in the case of nervous subjects. Nothing is so apt to make the poison so active as heat, and nothing favors its activity less than cold. Let the body be kept cool and at rest, and the activity of the poison will be reduced

to a minimum. Any active exertion whereby the circulation is quickened will increase both pain and swelling. If the swelling be severe, the part may be rubbed with sweet oil or a drop or two of laudanum. Stings in the eye, ear, mouth or throat sometimes lead to serious consequences; in such cases medical advice should always be sought for as soon as possible.

PROFITABLE EVENING EMPLOYMENT.—I do not believe in spending all the pleasant hours in a steady round of sewing and fancy-work to ruin bright eyes permanently, though part of the time may be employed in this way, but I would advise the young people of every household to take up some study and pursue it thoroughly. If there are several members with different tastes, let each take up his special pursuit in turn. If art is first, read Gilbert Hammerton's books, and enjoy them; if geology, let the student of that science read "The Old Red Sand-stone" of Hugh Miller, or some of the recent publications, among which stand first in my mind those of our eminent Canadian geologist, Dr. Dawson. His works, "Nature and the Bible," "The Story of the Earth and Man," and "The Dawn of Life," all read like a continuous geological poem, though strictly practical in their honest convictions. Of works on botany, Professor Gray's stand first, and after one has mastered "How Plants Grow,"—there is a pretty little book called "How Plants Behave"—that is very charming. If while sitting by the evening lamp, our young people wish to learn a little of the history of many nations, let them read Collier's "Great Events of History," each reading a turn while the rest take notes, or ask questions at the close. In this, and many other ways, the evenings will pass pleasantly, and

be eagerly looked forward to through the stormy days.—ANNIE L. JACK, in *Rural New Yorker*.

THEORY AND PRACTICE.—“A pretty fellow you are to instruct the public on rural matters, when you can't supply your own table with vegetables, or raise a good head of celery to save your neck!” A faithful report of domestic conversation on this point between agricultural editors and their wives would be very funny—to the public. Thus writes Mr. Coleman in his sprightly farm and garden column of the *Christian Union*.

The *Rural New Yorker* quotes the above with evident approval; there's a world of truth in it. Horticultural editors, as well as agricultural ones, must stir around pretty lively, or while they are telling other people what to do, they are neglecting their own plants or garden. But if we would be fresh for our editing we must not neglect a little daily practice.

BOUQUET DAHLIAS.—Bouquet Dahlias are infinitely superior to any of the other sections to use for room decorations and for bouquets; some of the pure white sorts are quite charming. They are very easily cultivated, equally so with the other sorts, and the large number of flowers produced on a single plant is remarkable. Some of the varieties have a tendency to grow rather tall, others are not more than eighteen inches high. Raisers of new varieties ought not to save seeds from these tall sorts, but should get into a dwarf strain, as the tall sorts are not near so useful as border plants. The soil should not be rich, like that generally recommended for the large flowered section. A border of light soil that has been well worked but not manured answers well for them.—*London Gardener's Monthly*.

BASKET WILLOWS.—The best and most profitable osier to plant is that from France, cuttings of which may be procured from persons who have successfully introduced it for basket making purposes. First-class osiers sell readily to basket makers at fifteen cents per pound. Osiers may be planted at any time during November and December; indeed, immediately before and during the rainy season. Native willow is of no commercial value. The ground should be low, but not so low as to admit of standing water. The rows should be about three feet apart, and the cuttings placed about three feet apart in the row. Cultivate two or three times the first year, and keep the ground clear of weeds. Do the same the second year.—*Willamette Farmer*.

HOW TO HAVE NICE PLANTS.—First of all, I am very careful not to have any dust set in motion about the house; for when plants are in a healthy condition, the pores of the leaves are all open. Dust falling on them fills up the pores, causing the leaves to look dry, and after a while to fall off.

Second, I am careful to give my plants water when they need it most, and not to give any when the earth is already wet, as too much moisture causes them to turn a dark green and the roots begin to decay. On the other hand, if kept too dry, the edges of the leaves first, and then the whole leaf, will turn yellow, and soon the entire plant looks as if it had stood where the fire had scorched it.

Third, I am careful what kind of soil I use. For Geraniums I use three parts of decayed sods, two parts of scrapings of the barn-yard, and one of sand; for Heliotropes, three parts manure, one part sods, and one sand. Many failed to have healthy Heliotropes by not hav-

ing the soil rich enough. For Carnations I use sods, two parts; manure and sand, one part each; for Roses, leaf mold, two parts; manure and sand, one part each; for Verbenas, sods, one part; manure and sand, one part each. I give the soil for these five sorts as they are the most commonly grown. If this mixture is used, and the plants are treated in the way I have described, I think any one may keep them nice and thrifty.—KNOWLES, in *Rural New Yorker*.

Editorial Department.

THE LANDSCAPE GARDENER.

The landscape painter sees what actually exists, with more or less of its subtle relationships; the landscape gardener deals with the growth of changing trees whose future he must study before he can rightly do his work. One is nature's present interpreter; the other is her prophet. The painter goes forth in the glory of morning, or in the clear light of noon, or at the faint mysterious twilight, to see the woods, the lone rocks, the wrestling pine, the mournful sea, the cloudy sky, the unutterable hosts of starry heaven. And it is, for him, simple sight, simple receptiveness, simple life in the present; he paints his picture, and it becomes a fixed fact. The gardener goes out to plant his trees on an empty, barren waste; he goes out to make his living, changeful and growing picture. What is it that he must possess, and what is to be the direction of his toil, and the measure of his success?

This typical landscape gardener has to plant leafless sticks, and small, undeveloped trees. He must be able to read their future, able hour by hour, to realize the "will be." The crowning need of his nature will therefore be a cultured, chastened, sincere imagina-

tion, which sees in clear revelation the future appearance of each mature tree, the beauty of each projected group, the balance and harmony of part with part, the completeness of the final whole. It is essential, if any man would be a true landscape creator, or gardener, that he shall have lived blithely with nature, and known alike her low whispers of summer and her wrath of winter storms—alike her pleading, her secret-telling, and her menace. Who shall make a planted forest seem real, unless he has also known the living forest? Who shall place trees fitly side by side unless he knows their subtle relationships, and their bonds of friendship?

The landscape gardener's art consists in revealing the beauties and concealing the deformities of the given plot of ground. He may use a great number of species, but the continuity of the plan must be preserved, and the masses of trees and the open spaces must blend, each with each, so as to produce a noble and dignified effect. Lonely tree tops reaching upward as spires are never effective, and tall trees, with naked trunks, which overtop a dwelling house, are out of their proper place. Trees pruned closely, with only bare trunks and small tops, are unendurable for landscape work. The best landscapes present an alternation of light and shade; here the trees cluster closely in friendly fashion, there they meditate, a little apart and the sunlight lingers on the grassy floor, and the bee-swung lilies nod in islands of bloom.

To be a landscape gardener is to deal with and yet control moving forces, to, as it were, paint a picture where sunrise, sunset, midnight, noonday come, and do their work daily, and nothing is crystalized into unchangeableness, but the stream flows, the birds sing, the flowers twinkle, the leaves mysteri-

ously tremble, and everything so moves on forever.

THE MEN WHO CARRY SHEARS.

In our last number the reader found an article on injurious pruning, or rather mutilating, of trees and shrubs. The remarks on city gardens and gardeners are timely and well sustained. In far too many cases the gardens of any large city are monotonous and coldly formal, and insupportably grim. It were far better to have two or three well-grown, natural, and handsome trees on a city lot, with the rest in lawn, and clumps of roses, than to crowd the lot, and offend the artistic by immovable pillars of tortured green.

We all know the shear-bearers—the men who believe that evergreens and deciduous trees alike must have a smooth naked trunk, crowned by a conical head. The type of this ideal tree is, as our correspondent states, the little green trees made out of shavings, and stuck on painted blocks, which were the pride of the Noah's ark of our childhood, as also of the amusing Nuremberg toy villages now seldom seen.

The men who carry shears, and whose motto is "uniformity," forget, or never knew, that the use and beauty of an evergreen tree is far different from the use and beauty of a deciduous tree. They are of two widely removed types, and the law of one is not the law of the other. The widest part of a healthy coniferous evergreen is near the ground, and it should taper upward. Little or none of the trunk should be revealed. Pruning should aid its regular development, but should never destroy the graceful droop of the branchlets. The widest part of a deciduous tree is some distance above the parting of the branches, and a naked trunk is a part of the beauty of the tree. It is foolish,

almost criminal, to try and efface these lines of difference. The pyramidal cypress whose flowing lines reach to the ground, and the sturdy pine whose side-branches rise in emerald terraces, are examples of harmonious strength. Whosoever cuts them into the similitude of nine-pins, or truncated cones, or cubes, or impossible monsters, or sugar-loaves set on a post, or any other formal and popular shape—is making honest labor a mistake, and honest steel a curse, and honest wages a misapplied force.

AN OVERWHELMING OFFER.

Some generous-souled seedsmen, of Tennessee, whose names, for reasons hereafter detailed, we do not care to advertise, have sent us a batch of circulars, and request us to insert marked portions, as advertisements, to the amount of five dollars, which we will be expected to take out in the form of seeds. We can, we are informed, have Normandy Giant White Corn—the "finest corn in the world;" the Peach Tomato, the "most delicious tomato," etc.; the Oomseana Sugar Cane, which will "save millions to the farmers;" the Mammoth Spring Wheat, etc.

Now we are not open to that kind of an offer from anybody. Our Publisher will be glad to receive respectable advertisements, but they must be paid for in cash. If this editor wants seeds of Giant White Corn, or of any other doubtful novelty, he can find the money to buy it with, and the time to send an order direct to these Tennessee men. Advertisements paid for in seeds may tickle the fancy of some country newspapers here and there, but we desire with all force and clearness to repeat, these things are foreign to our aims. We are editing this monthly for the sake of horticulture, and the develop-

ment of rural homes all over our State, and to this end we devote our leisure from other employments. Shall we make the CALIFORNIA HORTICULTURIST, with its hopes and prosperity, a medium of small trade, and of personal favors? Shall we lug advertisements into our editorial columns, and hamper our own freedom? Not if we know ourselves; as an aggressive youngster puts it, "not much."

There is something further to be said. The Mammoth Spring Wheat, mentioned in these circulars, is beyond question that variety known as Diamond Wheat, or American Mammoth Rye, which was fully exposed in the *American Agriculturist*, and elsewhere. For ten years past, circulars of various seedsmen have said: "Originated in Oregon two years ago." We have no knowledge whatever of the other novelties mentioned, but they are in bad company to say the least.

OUR PROPOSED JOURNEYINGS.—Before this number reaches our readers, the editor will be out among the people, in search of new experiences, and a wider knowledge of the needs and capabilities of this State. Unless a writer goes out among men, living their life, studying their thoughts, divining their possibilities, he will, sooner or later, lose his hold on all which is vital and hopeful in literature.

This out-door knowledge is doubly a requirement of horticultural writing on this coast. Many of the new things every day found out by our practical men—facts of climate, of soil, of methods—are as yet unwritten, and dimly expressed. With the next number we shall therefore begin a series of Letters and Editorial Notes from different portions of the State. The first will be from San Joaquin County.

NEW PEACH, "WATERLOO."—A seedling originated in Waterloo, N. Y., by Mr. Henry Lisk of that place. Size, medium to large, good specimens measuring nine inches in circumference and weighing five ounces; form, round, with a deep suture on one side, from stem to apex; stalk in a deep cavity, apex slightly depressed; color, pale whitish green in the shade, marbled red deepening into dark purple crimson in the sun; flesh, greenish white, with abundance of sweet vinous juice; adheres considerably to the stone like Hale's, Amsden, etc. Season: it is believed to be a week earlier than Alexander and Amsden. Mr. Lisk says that in the summer of 1877 it ripened several days earlier than these varieties. It is a remarkable keeper, ripe specimens having been kept in perfect condition nearly a week after being picked. These same specimens were ripe at the time they were gathered. It will therefore be of great value for shipping. We think we are perfectly safe in rating it as the largest and finest of all the very early peaches.

ALL the morning I have waited to be out of doors trying my new spade at making garden. The next best thing is to peep into the CALIFORNIA HORTICULTURIST and find out how to do it, or what to do after the spading is done, rather (to attend a little better to grammar and sense at the same time). In the first place, I hope none of us are so poor in land and time and taste, and love of nature, as not to have a garden; it had better be ever so small, even as large as a window-sill, rather than none at all, and we were about to say, that if you want any hints upon the subject, you had better write the editor of the HORTICULTURIST and tell him your difficulties. I don't know whether he would

answer all inquiries personally, but it might appear in his magazine, which if you should subscribe for, perhaps you would be saved all further questions upon the subject of gardening. The various Granges have been notified by means of a complimentary copy, with a card inclosed, that this magazine will be adapted and devoted to their interests, which please make a note of.—C. A. C. in *California Patron*.

THE BEST WHITE ROSE.—Somebody asks what is the best white rose? And the editor is expected to marshal in fancy the whole long array, and settle the question.

On due consideration we can think of nothing superior to that tea-scented rose, Niphetos. It is not so well known as it should be, for it has been in cultivation since 1848. It has grandly-shaped waxen - white flowers. Other white, or nearly white, tea-roses are Alba Rosea, Julie Manais, Rubens, and Sombreuil. Of the nearly allied Bengal roses, the best white is Madam Bosanquet; Aimee Vibert, and Madam Massot, are good white Noisette climbers. Boule de Neige and Madam Lacharme may be mentioned among the hybrid perpetuals.

OURSELVES.—The January number of this work [CALIFORNIA HORTICULTURIST], is registered "No. 1, Vol. 9;" it is, therefore, no new venture, though seldom seen so far east as London city. It is a well printed, large octavo monthly; in matter various and useful, in style elegant and winning. The interest it has for us, however, may be judged by reference to two matters that we encounter on casually turning over the pages. One of these is a declaration to the effect that "no garden in California below the 39th deg. should be

without its Winter Blooming Roses; even north of this latitude, with judicious management, they may be made to exhale sweet incense on the 'chilly eve.' Nothing can give the amateur or professional florist greater pleasure than to behold a bed, or even a single plant, of these winter roses in all their glory during the days that are dark and cold and dreary." In Europe the 39th parallel cuts through Lisbon and the Balearic Isles, where winter blooming roses are by no means uncommon. The other matter that attracts our attention is a statement to the effect that in California Eucalyptus globulus grows with such vigor that it kills out all other trees in its vicinity. Mr. John Ellis, who has charge of the University grounds, writes to this effect:—"The Eucalyptus globulus hangs like a vulture over our lawns and gardens. It deals out death impartially to all the little plants within its reach. It saps the soil, and shades houses which, in our beautiful climate, should be sunny. In its proper places, on our treeless mountain slopes or in the miasmatic swamps, the eucalyptus may be respected and esteemed. But is it possible to find in our cities or towns, suburban residences or country homes, a large or small garden not fairly smothered with eucalypti?" Well, we can not do much in the way of winter roses in the open ground, but the severities of our climate, which render that a difficult feat, effectually prevent the eucalyptus from becoming a vegetable vulture, although from the peculiar popularity it has acquired it has become somewhat of a nuisance in another way.—*The Gardener's Magazine*, London, March 1st.

THE best thing in the world to buy, if one is sure of a good article at a low price, is experience.

Editorial Notes.

THE GOLDEN GATE PARK.—In a drive through the Golden Gate Park we were much pleased at the progress being made and the taste displayed. The trees look well and the turf is beautifully kept. We noticed one border that pleased our fancy very much indeed. It was composed of Golden Feverfew and blue Lobelia alternated, and we thought it very charming. The fine conservatory that is in progress of erection will give room for an immense number of plants, and we mentally rejoiced over the happiness that was in store for us when that building should be filled with choice plants, and we should be permitted to visit it. If we should make any criticism upon the Park it would be to regret that there was not more variety in the kinds of trees planted. Still we know there was much to contend with in the nature of the soil and the great force of the winds, and perhaps it was not possible to enlarge the list. We are not acquainted with the gentleman in charge, but should be much pleased to have some facts from him about the Park for publication.

THE JAPANESE PERSIMMON IN MISSOURI.—Some of our readers will doubtless remember that, in the fall of 1877, parties in San Francisco shipped a number of Japan Persimmons to St. Joseph, Mo. We have felt much interest in this undertaking, and have hoped it might succeed, but a letter recently received from a prominent gentleman of that city, states that the trees are all or nearly all dead. Our correspondent has not, however, lost faith in the ultimate success of the Kaki in Missouri, and hopes to see a new and more successful attempt made. He thinks the trees should be sent from San Francisco by express to avoid the delays of the last shipment.

AMERICAN PLANTS IN ENGLAND.—A writer in the *Garden*, speaking of valuable trees, mentions the Redwood in terms of approval. He, however, proceeds to state, with the utmost gravity, that the Redwood is largely used in California for building purposes "because it burns with difficulty." This will strike Californians as particularly absurd. Dry redwood is very inflammable, and is the favorite material for kindling wood. It is cheap, and it is durable. But sensible people cover it with fire-proof paint.

FERTILIZERS FOR POT PLANTS.—Flour of bone is recommended as a good fertilizer for hard-wooded, slow-growing house or conservatory plants, such as the Camellia. A tablespoonful may be stirred into the soil of the pot. We do not know whether this flour of bone is kept for sale here, as we have not seen it advertised. The best time to force Camellias is in the spring. Soft-wooded plants may be fertilized with liquid manure, made by dissolving guano, a teaspoonful to a gallon of water, or by putting

stable manure in water until the liquid is about the color of weak tea.

BUYING NOVELTIES.—The *American Agriculturist* is in the habit of giving good advice to its readers, and in the February number it gives them a caution in regard to new varieties of fruit. Every year the public are invited to buy some new variety of apple, peach, pear, plum, strawberry, etc., that is said to be a great deal better than the old. Of course this is often true, still it is good advice that the *Agriculturist* gives when it says, "do not go too heavily into new varieties. Plant out trial beds of the new kinds that you may test their adaptability to the soil." This is especially good advice for California where both soil and climate vary so much.

REMOVING FRUIT STAINS.—As the *HORTICULTURIST* intends to do all in its power to promote the culture of fruit, and the good time when every one shall have all the fruit they want, and as one result of this state of things will no doubt be that our housewives will sometimes be troubled with fruit stains, therefore we present them with a receipt, taken from the *American Agriculturist*, for making what is called "Javelle Water," and is used for removing stains from white cloth. It can not be used on colored cloth as it would bleach it: "One pound soda in one pint water; four ounces chloride lime ditto; mix the two, shake thoroughly; when settled pour off clear liquid to use. Keep in glass. Wet stains before washing, and rinse well."

ROSES, NEW AND OLD.—The *Country Gentleman* is an old favorite of ours, and in looking over the columns of a late number we were much interested in an article on roses. After speaking of the great number of new kinds that have been introduced within a few years, the writer quotes from a book called "My Garden," by Alfred Smee, in which we are advised to "begin with at least two hundred of the hybrid perpetuals and add to them as fancy may dictate." The idea is delightful, and the imagination runs riot, and feasts upon the picture thus presented, but alas! not many of us can have such a rose garden anywhere but in imagination, and to us it is very consoling to be told, as we are in this article, that we may be happy with a smaller number. The truth is that many of the varieties are so much alike, that if the labels were lost, no one could assort them. The *Country Gentleman* gives in the article wood cuts of some that he would name as among the best. These are Marechal Niel, John Hopper, Glorie de Dijon, Souvenir de Malmaison, Persian Yellow, and Moss Rose. If to these we should add the Saffrano Hermosa, Luxembourg, and Lamarque, we might rest satisfied for a time at least. In a small collection the object should be to get kinds that were not only choice, but also as different as possible.

The Persian Yellow Rose which we have mentioned is not a monthly, but the rich, clear color of the per-

fect bud renders it pre-eminent for beauty. It is a rose of often scraggy growth, and always is the thorniest of the thorny. It has bright, delicate foliage, and, all in all, its good qualities predominate.

DWARF SEQUOIAS.—At the Handsworth Nurseries, near Sheffield, England, may be seen a curious freak of nature. Among some seedlings of the *Sequoia gigantea* raised from seed sent from California was one which instead of being a giant like its ancestors was a liliputian. They have succeeded in propagating from this, and now have about a dozen trees that are five years old and only five or six inches high, yet preserving the true character of a *Sequoia*. There is an account of them in the *Garden*.

THE CLIMBING HYDRANGEA.—This plant is still under discussion. Mr. Peter Henderson, in the *Gardener's Monthly* for February, quotes Mr. Thomas Hogg, a well known traveler in Japan, as speaking of it in high praise, saying that when he and Dr. Hall first saw the Climbing *Hydrangea* in full bloom, festooning the trees on the Hakone Mountains in Japan, they were perfectly bewildered by its novelty and beauty. This is strong language and would seem to justify some faith in this plant, which we hope will prove all that is claimed for it.

A MUNIFICENT GIFT.—A Frenchwoman, Madam Thuret, has just paid \$400,000 for a garden, and then presented it to the French nation. It is to be kept as a national school of botany and horticulture. It is to be hoped that some one will give our University a similar gift some of these days.

STOCK FOR ROSES.—We confess to a very great dislike to roses grown in any other way than on their own roots, but as all growers do not agree in this, the question of stock for grafting or budding becomes a matter of importance. In early times in California, all roses we bought were grafted on what was called the Castilian. This stock was of an exceedingly vigorous habit of growth, and threw up suckers in amazing numbers, requiring great diligence on the part of the cultivator to keep them in subjection, to say nothing about divers scratches received in the operation, for this rose is one of the most ferociously armed varieties we ever came across. The Manetti has been the rose most used in England for stock, a single florist there budding 250,000 every year, while another who grows twelve acres of roses covers eleven of those acres with roses on the Manetti stock. We are told, however, that a seedling Brier from France is now being extensively used in Europe. It is recommended as making good roots, which the Dog rose, sometimes used for stocks, does not, and as not being inclined to suckers; also as being especially suited to some roses which do not succeed very well on the Manetti roots. Whatever rose is used for stocks, all buds on the cuttings that will be below ground should be carefully removed.

This will prevent suckers. We have seen it suggested that by using different stocks the season of blooming might be prolonged, as the seedling Brier is later than the Manetti. We suppose the commercial growers will always bud the more delicate kinds, therefore we hope they will obtain the very best stocks possible.

PRUNING OF HOYAS, ETC.—Hoyas should only be trimmed when growing beyond bounds, as they flower for a series of years on the same spurs. Do not prune *Stephanotis* till after it is done flowering. The very best time to destroy insects on plants is immediately after pruning.

GNAPHALIUM LEONTOPODIUM.—This lovely little Alpine, with the woolly, silvery white bractes is easily grown from seed if sown early and transplanted in good light soil. It is well known to travelers, and has been the theme of song and romance as the Edelweiss of Switzerland.

NEW SEEDS OFFERED.—An English catalogue offers seed of a blue daisy (*Bellis Rotandifolium ceruleum*), also of a Cape everlasting flower (*Gnaphalium*) of a pure, silvery shining white, some of whose blossoms are said to be three inches across, and a *Poinciana Regia*, var. *Empress of India*, with crimson and white flowers.

In the catalogue of E. G. Henderson & Son, Maida Vale, London, we notice a description of a new and wonderful Japanese Haricot bean. These beans (it is said) are to be first boiled in water till tender, then cooked in sugar, when you will have a most excellent marmalade. Our English cousins congratulate themselves upon having so important an addition to the sweets now in use, and remembering how hard they find it to grow fruit we are glad they have this new and wonderful bean. But, for ourselves, with the memory fresh in our minds of John's last present on the recurrence of the China New Year, we prefer peaches, pears, etc., and we think any one who has tasted the preserved beans in a box of China sweetmeats will agree with us.

INSECTS ON FERNS.—A writer in the London *Garden* urges diligence in destroying insects, and says the very best time to do this, especially on ferns, is when they are in a dormant state. He says scale is very hard to eradicate unless taken when the fronds are in a mature state, enabling them to bear the insecticide much stronger than when there are young and tender fronds. He finds the best way to destroy the eggs of thrips to be, dipping the plants at this time in some strong solution of insecticide, and letting it dry on, and repeating this three or four times before the young growth commences.

BROUSSONETIA PAPYRIFERA, or Paper Mulberry, has a habit of varying much in foliage when grown

from seed. This makes it an interesting subject for experiments, and it is said to be well adapted to the South.

AMERICAN PLANTS IN ENGLAND.—Our native species find favor abroad, and even, in some cases, are shipped back to the United States and sold to wealthy ignoramus who do not know their own plant-neighbors. In a single recent English catalogue we notice *Castilleja indivisa*, (called false bugloss) from Texas; *Castilleja purpurea*; *Gerardia densiflora*, *G. grandiflora*, and *G. heterophylla*, pentstemon like flowers from our Western States; *Phacelia Menziesii*, from California; and *Sagittaria variabilis*, a new North American species.

OLIVE OIL FOR SCALE BUG.—Mr. John Hampton, of Oakland, informs us that he sometimes uses Olive Oil, applied carefully with a camel's hair brush, as a remedy for the scale bug. If too much is used, the leaf will be injured, and, in any case, it is not a safe application to soft and delicate leaves, such as ferns. But it seems particularly well adapted to the broad leaved evergreens, such as *Camellias*, *Gardenias*, *Oranges*, *Daphnes*, etc. It is also a remedy for mealy bug, white scale, etc. The object, in an application, is not to cover the whole leaf, but to touch the insects.

AN AMATEUR GREENHOUSE.—During a recent visit to Salinas City, Monterey County, we received an invitation from Mr. J. P. Stanley to visit his wife's amateur greenhouse. So we walked up Main Street towards the Monterey Depot, crossed the bridge, and were soon viewing one of those neat gardens the sight whereof is a pleasure. There were spring bulbs, bedding plants, roses, neat borders, and, all in all, quite a contented blossom-place. But the greenhouse? Ah! that was worth talking about. It was not large; it did not cost much money; it was not full of costly plants—but it was cosy, and comfortable, and successful, and just what that mythical "Everybody" ought to have. It was a lean-to of rough redwood, built against the south side of an outbuilding; there was a bench in the centre, and shelves at the sides; the roof was low, so that the plants were all near the glass; and, best of all, the sprouting seeds, and growing seedlings, and blooming plants, and unwithered cuttings showed the effects of constant daily attention, given from a pure love for plants and flowers. This fact, so plainly visible everywhere, made the little greenhouse very charming, and we wish there were dozens and hundreds of the same type, in city, town, and village, and that each one of the happy owners would now and then send us some Greenhouse or Garden Notes.

A PALM COLLECTION.—There is a tree whose name brings memories of far-off songs, and tales of deserts, crossing caravans, and wells of blessing, where the date-palms droop, heavy laden. And there

are other palms in every land under the tropic sun, for it is a royal, warm-blooded race which once possessed the earth. It is lone, silent, with a wonderful beauty all its own, and a grand simplicity.

So many palms are hardy here that this may be made a land of pre-eminent beauty. We may use them for avenues, for roadsides, for our lawns and gardens. We can fill our valleys and cover our mountain slopes with historic and permanent trees. Oaks, Palms, Oranges—is not this a land for whose development we may gladly toil? Wherever we hear of or see any choice Palms we shall report them.

Mr. John Hampton, of Oakland, has a collection of which we note the following: *Chamaerops excelsa*, height thirty feet, leaves fan-shaped; *C. humilis*, the European species; *Pritchardia filifera*, called the San Diego Palm; *Livistona Australis*, or *Corypha Australis*; *Jubaea spectabilis*; *Phoenix dactylifera*, (date palm); *P. Canariensis*; *P. pumila*; *Sabal Adansonii*; *Brahea dulcis*; *Kentia Bauerii*, *K. sapida*, both rare and valuable Palms seldom seen here. All the above are hardy in the vicinity of San Francisco. *Phoenix Leonensis*, a palm which has white edges to the pinnate leaves; *Seaforthia elegans*, *Ptychosperma Alexandra*, *Cocos plumosa*, and some others, are not hardy here.

THE WATSONVILLE NURSERIES, ETC.—The people of Monterey County have been building a new court house, and our old and esteemed friend Mr. James Waters, the nurseryman of Watsonville, has been overseeing the work during the last summer, autumn, and winter. Mr. Waters has good soil, grows good trees, and keeps a neat nursery where a brother horticulturist is always welcome. Mr. A. W. Mabury of Salinas is dealing in trees from these nurseries, and, having bought a fine tract of land near the town, is laying the foundations of a nursery of his own. We hope these two gentlemen will, between them, manage to persuade the farmers of the Salinas Valley to plant more trees for shelter and for fruit. Salinas Valley is, for the most part, entirely treeless, and no inhabitable land ever needed trees more.

MR. HUTCHISON'S NURSERIES.—Mr. James Hutchison, proprietor of the Bay Nurseries, Oakland, has one of those pleasant places which it is a treat to visit. The large grounds are at all times worth study. The mixed borders, the spring bulbs, the pansies, or carnations, or, in autumn, the asters and dahlias, attract attention. The different greenhouses are conveniently arranged, and filled to overflowing. So we will tell what we saw there on a recent hasty visit.

One house is devoted mainly to *Smilax*, another to *Fuchsias*, *Libonias*, and similar plants, one chiefly to succulents, and several to broad leaved evergreens, general stock, and propagation. Passing into the nearest we noticed *Osmanthus ilicifolius crispus*, and *O. argentea variegata*, which are broad leaved

evergreens recently received. The crisp, oak-like leaves, in the latter variety elegantly blotched with yellow, have great substance and beauty. *Ilex crenata aurea* has fine and delicate leaves, *Daphne fittonia*, a dwarfish growth, has been, for two months past, covered with its fragrant rosy-purple flowers in small clusters at the ends of the branches. The fragrance is not so penetrating but is more pleasing than that of *D. odorata*. In this house the centre space is occupied with *Camellias* planted in the ground, intermingled with a few *Daphnes* and *Gardenias*, and, at the time of our visit, dozens of *Camellia* buds were opening in all their staid and waxen regularity.

Begonia Manicata is a good spring bloomer, sending up spikes of pink flowers; *B. sanguinea*, an old variety, but seldom seen, attracts much attention with its smooth large leaves, beautifully scarlet beneath. *B. Weltoniensis alba* is a free summer blooming variety. *Crotons*, *Dræcenas*, *Coprosmas*, *Sanchesias*, and some *Tree Ferns* (*Dicksonias*), came next. *Euphorbia splendens*, of which we noticed several unusually large specimens, is now in bloom with its well known scarlet clusters rising above the twisted, thorny stems. A fine lot of *Auricarias* were noticed, and a stock of those popular flowers, *Cyclamen*, *Cinerarias*, and *Primulas*. The pot-grown roses are more than usually thrifty.

Pomological Notes.

LATE PEARS.—Our two best winter pears have been the *Doyenne D'Alencon* and the *Easter Beurre*. The *Doyenne D'Alencon* is a rather large, richly colored pear, which keeps until mid-winter. The flesh is sweet, juicy, and well-flavored. This variety also bears shipment well, and the tree is productive. The *Easter Beurre* has many synonyms, a good test of universal adaptability to varying soils and climates. It is a large pear of roundish oval shape, with yellowish and russet skin, and melting, buttery, rich flesh. The season is very late winter, sometimes well into spring. It is popular in market, and is our leading winter variety.

The *St. Germain* (or pound pear), is a very large, pyriform, reddish-green pear, of very poor quality here. The coarse, woody fibre of the flesh does not even cook well, although it is better in some years than in others.

Our orchardists have long ago discovered that only a few varieties of pears are profitable. Still, a later pear than the *Easter Beurre* would be a great acquisition, even if the quality were only medium, and there is even room for other pears of good quality, ripening at the same time. Among the rather new pears, not yet, to our knowledge, fruited on this coast, is the *William's d' Hiver*, a large, firm, juicy, vinous pear, ripening in January, and highly commended. A writer in the *Garden* speaks of *Bon Cretien d' Hiver* as keeping until April, and calls it a

large, valuable and well-flavored pear. *Beurre Bretonneau* is also spoken of as keeping until mid-summer. It is a better pear for cooking than for dessert.

BRICE'S EARLY JUNE PEACH.—We have received circulars and testimonials from *Seamans & Co.*, La Cygne, Linn County, Kansas. These set forth the claims of this new peach, and that in the most glowing terms. According to the statement sent us, this variety originated from pits planted in 1870, which fruited in 1874. We are told that "in 1877 it was tested beside the *Amsden*, *Alexander*, *Early Louise*, and others of the early peaches, and proved the superior in size, flavor, beauty, and early maturity. The average weight in 1877 was four and one-half ounces; some weighed five and seven-eighths ounces." The time of ripening is given at from ten to fourteen days in advance of *Amsden's*. Now, these are high claims, and are well worth the attention of our nurserymen.

THREE GOOD ORANGES.—The Florida Fruit Growers' Association is at work naming the best marked seedlings, and making a full list of valuable foreign varieties also. A portion of their report has been published in Moore's "Handbook of Orange Culture," and we give the descriptions of a few of the best:

Navel Orange.—Synonyms—umbilical, *Bahia*, *Pernambuco*; size large to very large; eye presenting an umbilical appearance (from which it obtains its name); stem inserted in a shallow-ribbed cavity, with deep lines; skin three-sixteenths thick; longitudinal diameter three and five-eighths inches; transverse diameter three and three-quarters; flesh very fine, melting and tender; juice sweet, sprightly, vinous and aromatic; quality first; origin *Bahia*, *Brazil*.

Magnum Bonum.—Size large to very large; flattened; color light, clear orange; eye set in a slight cavity; stem inserted in a narrow depression; skin smooth and glossy; thickness of skin two-sixteenths of an inch; longitudinal three inches, transverse three and five-eighths; fruit very heavy and juicy; quality best. A probable seedling raised at *Homo-sassa*, *Florida*.

Buena Vista.—Size medium; slightly flattened; color dark crimson; eye set in a slightly depressed cavity; stem in a slight depression; skin smooth, with deep pits; thickness of skin nearly four-sixteenths; longitudinal diameter two and three-quarter inches; transverse three inches; flesh dark; pulp coarse, but melting; juice sub-acid, sprightly vinous flavor; quality good. Seedling raised in *St. John's County*, *Florida*.

A MINNESOTA GRAPE.—The *Fruit Recorder* tells us that among the new grapes which seem to be adapted to a cold climate is the *Beauty of Minnesota*, which promises to take its place among the finest varieties. As its name indicates, it is one of the

finest in appearance and possesses the qualities that make it a most desirable grape. It is white, about twice as large as the Delaware, ripens with the Concord, growing in fine large clusters. Its originator, John C. Kramer, of La Crescent, Minnesota, claims for its parents the Delaware and Concord. Mr. Kramer devotes much attention to the culture of seedlings. We have two other varieties of his production, the Early Houston and the Early La Cross, and others not yet named.

This variety, and others mentioned last month, might be worth a trial by our friends in Modoc, and along the Oregon line.

THINNING FRUITS.—It pays to thin many species of fruits, especially the peach and grape. Grain is produced for the kernel, fruit for the pulp. A bushel of small fruit exhausts the tree much more than the same amount of large fruit. It is the production of seed that exhausts, not the pulp. Some peaches from trees thinned, sold at two dollars per bushel, while those crowded sold for twenty-five cents in a glut. Two-thirds were removed from four hundred pear trees; the yield from those left was one hundred and forty barrels. Thin peaches when of the size of a white walnut, when the stone is soft enough to admit a pin; if thinned too late no desirable results are attained. Thinning prevents rotting. Hale's Early when thinned did not rot, and the buyers marked them by another name, saying that they would not be recognized as Hale's, while those not thinned rotted badly in the same orchard. When the Hale rots the twigs bearing them die. The theory is that the trees set more fruit than can be brought to maturity.

There is little danger of thinning too much; four to eight inches apart are suitable distances, depending on the variety. Crawford's Early, Hale's, Old Mixon and Yellow Alberge require thinning in most cases. Crawford's Late, Stump, and Foster do not often overbear. Grapes should be thinned as soon as the shape of the bunch can be detected—when the berries are the size of small shot. Thinning one-half or less, as the case requires, does not lessen the yield in pounds; the bunches and the berries are larger. The heading back of peach trees was recommended. If done annually but one-half the new growth need be removed, but in some cases three feet of all the branches were cut away with good results. The peach bears cutting back better than other trees. An orchard was hacked off near the lower crotches with the intention of destroying, but the new shoots came out so vigorously they were retained, and yielded fine crops of fruit for many years.—*N. Y. Tribune.*

The February number of *Le Journal D'Agriculture*, published in Quebec, has just been received. The leading article is the first installment of an "Address on Agriculture," by M. Barnard, director of agriculture and of public works.

New & Desirable Plants.

[We shall glean from our exchanges and correspondence, notes on plants either new, or of promise in our climate. Our nurserymen are invited to send notes on any interesting plants received.]

DIEFFENBACHIA SHUTTLEWORTHII.—The Dieffenbachia Shuttleworthii figures among the great number of new plants displayed by Mr. Wm. Bull at our International Exhibition in the month of last April. Connoisseurs will recall the beautiful, erect bearing of that splendid novelty, and its great lanceolate leaves of bright green, adorned by a large silver ray on the whole length of their midrib.

This species occupies one of the best places among its congeners, and amateurs are glad to enrich their collections with it. Like most of the Dieffenbachias, this species has been raised on the warm lands of Colombia (South America), in the midst of those humid retreats where men whom love of nature animates would like to pass their lives in contemplation of her splendors, did not the desire of novelty force them to hasten their course and bring quickly to light the vegetable riches they have discovered.—Translated for CALIFORNIA HORTICULTURIST from *Revue L'Horticulture Belge.*

NEW CAPE HEATHS.—"Heaths have a charm for everyone, and yet for many years past they have not received the attention they deserve, simply because they are somewhat difficult to cultivate, and do not grow into large specimens in a single year." So writes a contributor to the *Garden*, and describes the following varieties, illustrated by the best colored plate the *Garden* has given this year: *E. obbata cordata*, white under glass, rose-tinted outdoors; *E. opulenta*, deep lake, shaded with crimson; *E. effusa*, crimson, scarlet and sulphur; *E. ornata*, rosy, carmine and white; *E. tricolor profusa*, large trusses, flowers deep rose-colored shading to white at the lip.

GLOXINIA HYBRIDA CRASSIFOLIA GRANDIFLORA NANA COMPACTA.—This is a novelty offered this season, as a "splendid success," by F. C. Heine-mann of Erfurt. He says:

"It is well enough known that the Gloxinias, especially in the second year, when they put out several shoots at once, can not be transported without danger of breaking off the blossoms, not even from one propagating house to another; yet more is this the case when the transportation is as far as to flower-stall or market. This new variety, on the contrary, unites all the beauties of the older crassifolia varieties, with the advantage that, in consequence of their compressed growth, they can be transported without further thought. The flowers appear on the short-repressed and closely-growing stalks, almost larger than in the stemmed varieties, and are six to eight centimetres in diameter. The leaves are about twenty-five centimetres long, and cover the pot so

that it is completely invisible. Pot and plant are as if from one casting, so that without the least danger of breaking, you can carry the whole plant by the flower-stalk." He enumerates the following "constant colors:" Satin-white, with red tongue; Satin-white, with red throat; Deep blue; Carmine-purple.

MALCOLMIA STRIGOSA.—New annual from Afghanistan. This new annual puts forth, when it reaches the height of five centimetres, its starry white blossoms, in whorls, like the *Primula Japonica*; continues to bloom very abundantly, and reaches, in the course of the summer, a height of about twenty centimetres. Dr. Aitchison, who introduced it, recommends it as a surprising novelty. — Translated from *Heinemann's Catalogue*.

PETUNIA HYBRIDA GRANDIFLORA FIMBRIATA, introduced last year, was honored with the States metal, at the general German Garden Exhibition at Erfurt, in 1876. This new class produces a comparatively large percentage of double and fringed blossoms, which can rival the garden poppies in size and doubleness, in richness and tenderness of shades of color, with the loveliest roses.

TORENIA FOURNIERI, also a last season's novelty, forms a quite round, light, and gracefully growing bush, which is uninterruptedly overspread with abundant bright blue flowers, flecked with dark blue. This brilliant novelty is adapted to culture in a pot, also to setting outdoors in summer. [The latitude of Erfurt, Prussia, is referred to.]—*F. C. Heinemann's Catalogue*.

MAGNOLIA HALLEANA.—Mr. S. B. Parsons, of Flushing, N. Y., writes to the *English Garden*, (June, 1878): "Regarding this Magnolia, some time prior to 1862, I had been much interested as to the best mode of getting access to the flora of Japan. I knew no one who possessed the tact and perseverance requisite at that time for such an undertaking, and for want of such an one my enterprise languished. In the darkest hour, however, the man appeared. One day in 1862 there walked into my office a gentleman with a frank and pleasant manner, who introduced himself as Dr. G. R. Hall, of Japan, who had for some years been making collections of plants in that country, and who had with him in Wardian cases the whole collection. He desired to know whether we would take, propagate, and distribute them. We consented at once, and the cases came. Did you ever see a connoisseur unpack a fine painting or literature open a case of books? Or can you dream how Schliemann felt when he unearthed the treasures of Priam's palace? You can thus fancy the enthusiasm of our employees when these cases were opened. I can not tell you at this date what plants made their appearance, but I recollect the Japan Maples, the Yeddo Grape, *Thujopsis dolabrata*, *Deutzia crenata flore pleno*, and a few bulbs

of *Lilium auratum*, which we sold to a firm in Europe for eighty dollars each. * * * Among the plants were two *Magnolias*, one of which we named *Halleana*, after Dr. Hall, and the other *Thurberi*, after Dr. Thurber. The former proved a gem, but for various reasons our propagation of it was small until 1869, when its merits, clearly displayed in large plants, induced us to extend its cultivation by all the means in our power. A large number near our office are now in bloom, while I write, and their general effect is like a mass of water-lilies. The plant is dwarf, and will probably not attain a greater height than six or seven feet. Its flowers appear much earlier than those of *M. conspicua* or *M. Soulangiana*, and, when fully opened, will often measure four inches in diameter. The individual petals are from three-eighths to one-half inch wide, and one and one-half to two inches long. When fully expanded they do not lie close together, and the sunlight between them gives to the whole flower a very unique appearance. It has a delicate fragrance, and is in all respects very charming."

We quote the above, though from a last year's *Garden*, to help our description of this beautiful *Magnolia*, which, at the date of writing (March 3d, 1879), has just bloomed for the first time, at Jas. Shinn's nursery, at Niles. The plants are two or three feet high, and were brought from Japan a year ago. They bear, on slender, leafless twigs (for this *magnolia* is deciduous), the large buds, in brownish, woolly sheaths; when the sheath first opens, the unopened petals are pink, their underside being exposed; but as they fall apart they disclose a pure white inner surface, while the pink outside fades to a faint streak down the middle of the petal. The flower is very fragrant, but not overpoweringly so. It is certainly a great acquisition, and seems to be quite hardy.

ARECA PURPUREA.—Mr. B. S. Williams, of Upper Holloway, London, thus describes this pretty new palm:

"An elegant neat growing palm; leaves pinnate; the stem and petioles are of a bronzy purple color, which makes a very striking contrast to the pleasing green color of the leaves. We have only at present seen this palm in a young state, having raised it from seed received from Madagascar. It is very distinct, at least in the small state, from any palm in cultivation, and on account of its dwarf and compact habit, and its graceful appearance, will be found to be admirably adapted for dinner-table decoration." — *Gardener's Monthly*.

TEA-SCENTED ROSES.—That enthusiastic rosarian, S. Reynolds Hale, has begun a series of articles in the *Garden*, and, speaking of individual roses, he praises in high terms the following: Adam, Adrienne, Christophe, Aline Sisley, Anna, Ollivier, and Cheshunt Hybrid. Catherine Mermet, and Comtesse de Nadailac, he places at the head of the list, and calls them "indescribable," "bewildering,"

"perfection," etc. The *Garden* gives an admirable colored plate of the Comtesse Nadailac, and Maria Van Houtte.

CHOROZEMAS.—These brilliant evergreen shrubs will be found of easy growth, and very desirable in the garden, throughout central and southern California. *C. Cordatum splendens*, *C. varium* Chandleri, and *C. varium nanum*, may be grown in small pots for windows or conservatory.

EPIPHYLLUMS.—These require but little attention, and will even bear a good deal of neglect. Plants must have all the sun possible during summer, and only a little water before blooming. *E. Ackermanni*, *E. crenatum*, and *E. speciosissimum* are deserving kinds.

BAMBUSA HETEROCTYLA.—W. B. Hemsley writes, in the *Garden*, of a curious new bamboo, which was in the Japanese garden at the Paris Exposition. The stem has oblique rings in divers directions, and it has rather wide leaves. Quite a number of the *Bambusas* are well worthy a place on the most costly grounds.

Reviews and Exchanges.

[All books on subjects in any way connected with horticulture will be reviewed in this department. Publishers are requested to state the price of each book sent.]

TREATISE AND HAND-BOOK ON ORANGE CULTURE IN FLORIDA. By T. W. Moore, Fruit Cove, Florida. Price, 50 cents. For sale by the author.

This work of seventy-three pages, magazine form, is one which we have read with careful attention. It is all which its title indicates. Mr. Moore has done, for the Orange in Florida, that which we hope soon to see done for the Orange in California. He has written a book which is plain, unpretending, truthful, and original. It is not compiled information, evidently; we obtain a clear view of the wild orange groves, of the methods of budding and transplanting them, of climate, systems of protection, varieties, treatment of trees, diseases, etc. We elsewhere give an extract from this book, which partially answers some recent inquiries about budding Oranges. Of course a portion of this book is only of value to Floridians, but by far the largest part of Mr. Moore's remarks are worthy of notice wherever the citrus family thrives. The book is printed in clean, large type, on good paper, but a little more care in proof-reading and punctuation would have added to its appearance.

THE PACIFIC RURAL HAND-BOOK, containing a series of brief and practical Essays and Notes on the Culture of Trees, Vegetables, and Flowers adapted to the Pacific Coast. Also hints on Home and Farm Improvements. By Charles H.

Shinn. Published by Dewey & Co., San Francisco. Price \$1.00.

It is not our business to review this book, nor will we adopt the transparent device of asking the Publisher of the *HORTICULTURIST* to "do it in our absence." There seemed to be room for a manual on this subject, and we have attempted to supply the need. That is the whole story.

The *Revue L'Horticulture Belge*, for January, contains an article on the Lantana, and an excellent colored plate of the newer varieties. The two best of these are *Roi des Nourpres* and *Canari*. There are articles on "Chrysanthemums," "Accessories to bouquets," which is charmingly written, the "London flower show," etc.

The *Gardener's Monthly* for February gives the fraternity of architects a needed hint that they must, if they would know their business, be able to plan for a safe and slightly conservatory as a part of any dwelling house. Few architects seem to realize, in even a slight degree, the needs of plants. When educated women become architects there will be a decided gain in these directions.

The *Fruit Recorder* is always readable, and its array of correspondence is marvelous. It pays particular attention to small fruits.

Catalogues, etc., Received.

[We shall acknowledge the receipt of all Seed or Plant Catalogues, Pamphlets, Reports of Horticultural Societies, Agricultural Reports and similar documents.]

Sutton's *Amateur's Guide in Horticulture for 1879*. Sutton & Sons, the Queen's Seedsmen, Reading, England. A good seed catalogue is a bewitching affair. It is fun to read it, and, in imagination, invest unlimited sums in folded germs and promises of bloom. There are degrees in catalogues as in everything else. This one belongs to the class of very charming and almost perfect ones. It is so large and portly that we almost decided to review it in the book department. First we admired the pictures of prize vegetables which are thoroughly English, and show the methods of arranging such things at the fairs. Next, in this beautiful catalogue, come three colored plates, quarto size, one of *Gloxinias*, one of *Asters*, and one showing *Primula*, *Cineraria*, *Calceolaria*, and *Cyclamen*. There are notes on the treatment of seeds and plants, original articles on "A year's work in the Garden;" "Garden Vermin;" "Cultivation of Vegetables;" "The Potato;" and "Cultivation of Flowers." The total number of pages, large quarto size, is 127, and the price is, to all except customers, 1s 3d. Either one of the three colored plates is worth that. We observe that, among the novelties, a double tuberous-rooted *Begonia* is offered.

Storrs, Harrison & Co.'s Catalogues for 1879, Painesville, Lake Co., Ohio. We have received from this well-known and enterprising firm a set of their circulars and catalogues. Among the new Fuchsias offered we notice Miss Lucy Finnis, a fine double white variety. This firm have a reputation second to none other in handling roses, and in mailing them safely.

Department of Agriculture. Special Report, No. 10, on the condition of Crops and Live Stock. These reports are not sufficiently complete to be of much service. In the report on horses, our State is represented by only three lines from Plumas and Yuba; only Plumas reports on cattle; only Trinity and Merced report on sheep; Merced puts in a word about hogs; and San Joaquin, Shasta, and Yuba are the only counties which make a grain report. In other words, only five counties in this State, and those not the most important, are represented in this fragmentary "Special Report."

Quaritch's Bibliotheca, etc., Part Third. This is simply a catalogue of books collected and for sale by this enthusiastic bookseller. We notice that a number of valuable books have been consigned to San Francisco, and will be sold without any reservation. Among these latter is Siebold's *Floral Japonica*. It is in two volumes, with 150 lithographic plates.

Price list of Native Perennial Plants, Shrubs, Climbers, Orchids, Lilies, Ferns, etc. Edw. Gillett, Collector of Native Plants, Southwick, Hampden County, Mass. This list contains many rare species, and the prices named are very reasonable. *Nymphaea odorata*, or Pond Lily, for instance, being quoted at 75 cents per dozen. *N. odorata* does well in a tub if the water is occasionally changed.

General Catalogue of F. C. Heinemann, Seedsman and Florist, Erfurt, Prussia. This catalogue corresponds, though on a more extensive scale, with Henderson's "Everything for the Garden." The German gardener who has this will find himself in the possession of the latest seed-knowledge. It is decidedly the best German catalogue we have yet seen.

William Bull's Seed Catalogue for 1879, King's Road, Chelsea, London. A plain, neat catalogue, without illustrations. The lists of Lilies, Tuberos-rooted Begonias, and Caladiums are unusually fine.

Park's Illustrated Catalogue for 1879, Mt. Vernon, Ohio. Mr. Park publishes the *Floral Magazine*, and has just issued a pamphlet on "Bulbs and Bulbous-rooted Plants," written by W. C. L. Drew, of El Dorado.

Descriptive Price List of the Tropical Nursery. Charles A. Reed, Santa Barbara, Cal. A neatly printed circular which offers some rarities. We observe two year Mangoes (*Mangifera Indica*), Sapodilla (*Achras sapota*), also Tamarinds, and Melon Paw-Paw, (*carica papaya*), a new fruit.

Beach, Son & Co., Seeds, Bulbs, Plants. No. 7, Barclay Street, N. Y. An unusually tasteful catalogue, offering a great variety of plants. It touches

also on such subjects as "Tools," "Labels," "Grafting-Wax." Large packets of seed, containing some three hundred varieties mixed, are offered to meet a large demand for "Wild Gardens."

C. H. Allen & Co.'s General Bulb and Plant Catalogue for Fall of 1878, with Supplementary List for Spring of 1879. Queen's, N. Y. An illustrated catalogue, devoted mainly to bulbs; among the few other plants we notice several new Hydrangeas from Japan, and the beautiful Chinese Wisteria.

H. W. Williams & Sons, Wholesale Catalogue for February and March, 1879, with advertisement of tree-labels. Batavia, Kane County, Illinois.

J. B. Farrington's price-list of ornamental designs for scroll sawing. No. 557 Dean Street, Brooklyn, N. Y. This catalogue offers scroll saw machines, and carving sets with manual of instruction in wood carving. This is a subject of interest to our lady readers, as they want brackets for their vases of flowers, and screens for their flower pots.

J. C. Vaughan's Bulbs and Florists' Supplies. No. 123 Randolph Street, Chicago.

J. Jenkins, Winona, Columbiana County, Ohio, sends a treatise on the art of propagation. It seems very practical.

H. Cannel's Illustrated Floral Guide, for 1879. Swanley, Kent, England. This is an immense catalogue of two hundred pages. It awakens our surprise and admiration. We very much like its general appearance, and also the motto for gardeners which it gives, viz:

"Work on, hope on and be you sure
Self help is noble schooling;
You do your best, and leave the rest
To God Almighty's ruling."

It is a great thing to do one's best. Mr. Cannel offers 109 named varieties of Begonias, 495 of Chrysanthemums, 289 of Dahlias, 720 of Pelargoniums, 194 of Fuchsias, and of other plants in proportion. After spending an evening over it, we feel obliged to confess that our cousins over the water are ahead of us in floriculture.

Kinsey's Fruit Farm and Nurseries. Dayton, Ohio. We see he offers specimens of fruit put up in alcohol. We have never noticed this feature in any catalogue before. There is a colored plate of the Monarch of the West strawberry, but it is represented of a much darker color than we have ever seen them here.

Joseph Harris's Farm Seeds. Rochester, New York. Mr. Harris, of Moreton Farm, is a well known agricultural writer, formerly one of the editors of the *Genesee Farmer*. He is now raising and selling seeds, and we have no doubt they are good seeds.

Arnold Peutz's Trade Catalogue for 1879. Jacksonville, Florida. Plants, seeds, ornamental grasses, etc. Mr. Peutz offers to send by mail the new water lily described by Mrs. Treat, in *Harper's Magazine* for August, 1878: This is the *Nymphaea flava*, or yellow water lily. It is said to do well in tubs and aquariums.

E. BUTTERICK & CO.'S Celebrated Paper Patterns.

The standard of fashion in Europe and America. They are perfectly reliable, and are extensively used all over the United States. Send stamp for catalogue containing cuts of the different styles for Ladies', Misses', Boys', and Little Children's **SPRING STYLES** now ready. Address—

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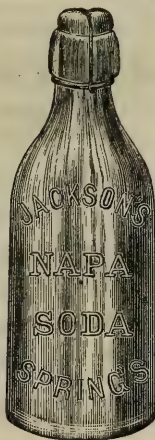
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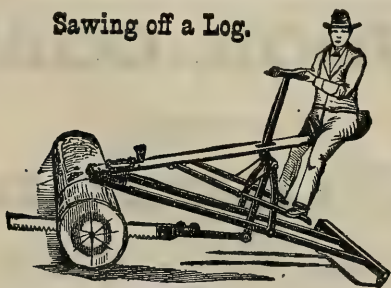
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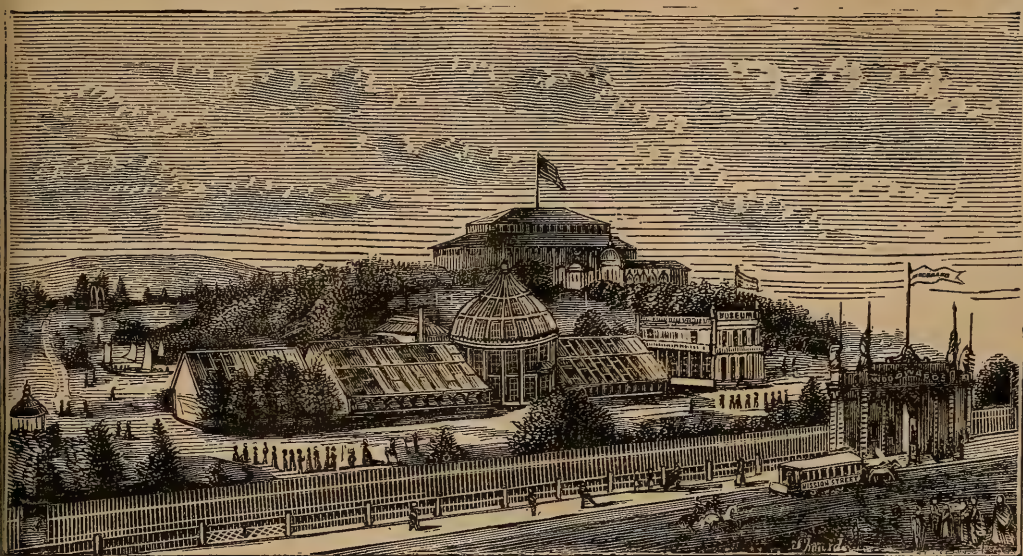
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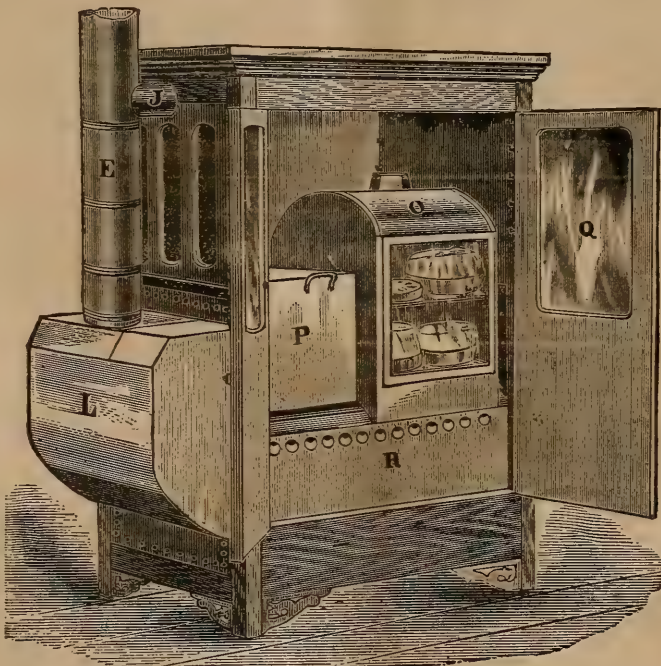
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Vol. IX.

MAY, 1879.

No. 5.

THE

California Horticulturalist

AND

Floral Magazine.

"Men come to build stately sooner than to garden finely, as if gardening were the greater perfection."
—LORD BACON'S ESSAYS.

CHARLES H. SHINN, — — — EDITOR.

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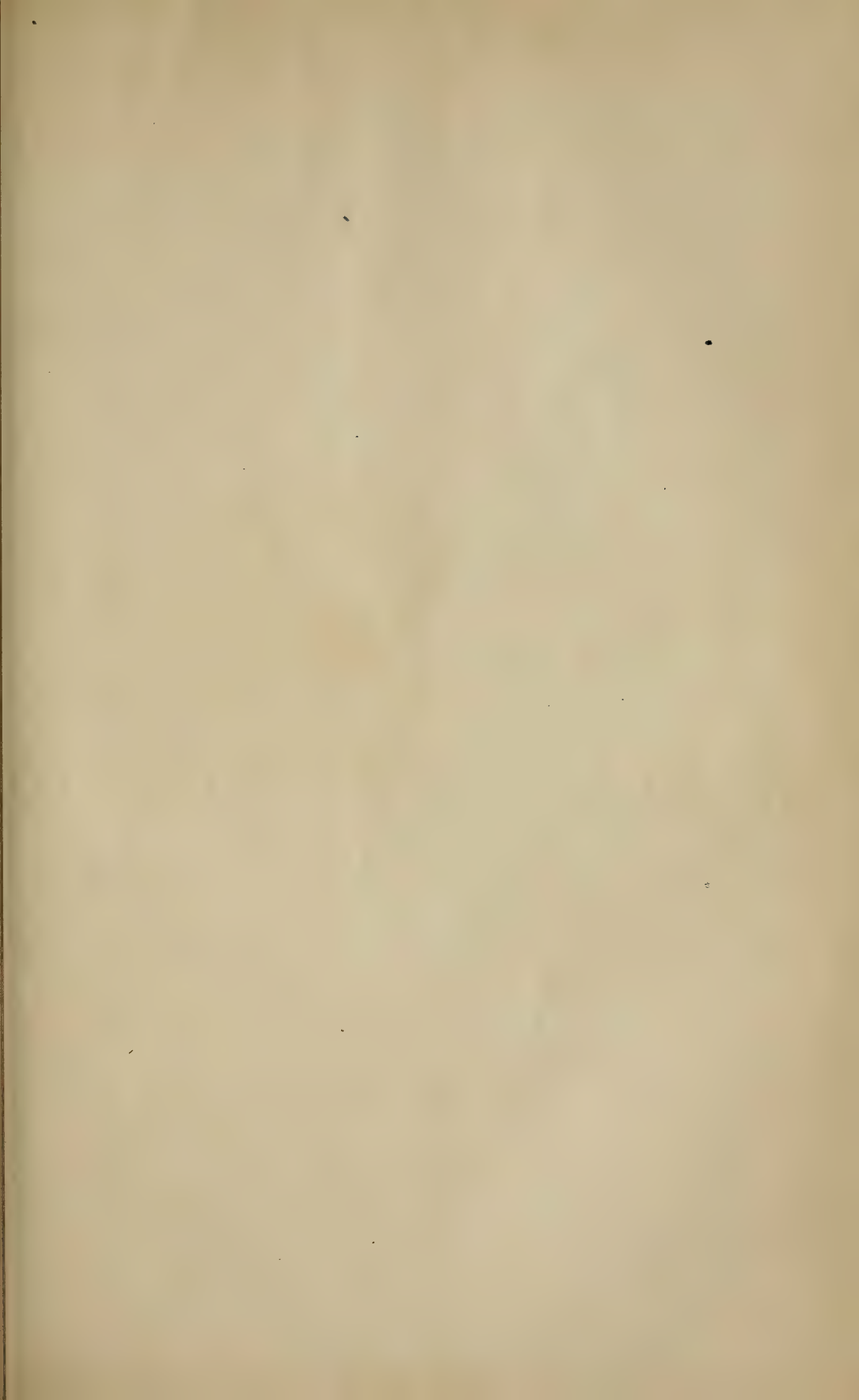
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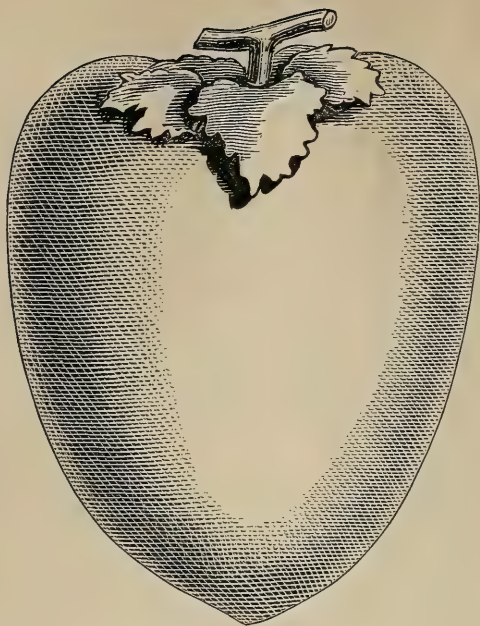
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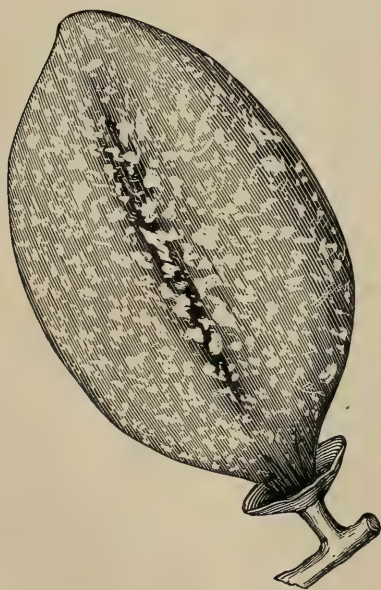
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JAPANESE PERSIMMON.—No. 1.



DRIED JAPANESE PERSIMMON.—No. 4

T H E

California Horticulturist

AND

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VOL. IX.

SAN FRANCISCO, MAY, 1879.

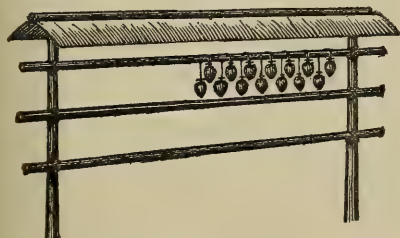
No. 5.

DRYING THE JAPAN PERSIMMON.

By J. J. JARMAN, Yokohama, Japan.

The following is an account of the method of drying in successful use among the Japanese cultivators, sent us with the accompanying illustrations from Japan :

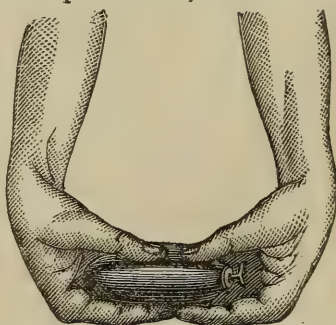
Illustration No. 1 [see frontispiece of the present number] shows the fruit as taken from the tree. It must then be peeled : this must be done by commencing at the stalk end, as this leaves the stalk on the fruit so that it can be the more easily hung up. Drawing No. 2 shows the fruit hung up to dry under



No. 2.

a straw roof made so that the rain can not get at them, although it does not matter a great deal if they do get wet; but they are all the better and keep much better if they are not allowed to get wet in the drying. The fruit should hang about thirty days. After the fruit has hung the thirty days, and as it is hanging, you take hold of it close to

the lower end and squeeze it quite hard: this is supposed to be done on the thirty-first day; on the thirty-second day you take hold of it about half way up and squeeze it as on the day before; on the thirty-third day you take hold of it near the upper end and squeeze it. That day, or the next morning, you take the fruit down from the drying place, and removing the string from the stalk you take hold of the fruit as shown in plate No. 3, and make the in-



No. 3.

dentation by squeezing it between the finger and thumb. The drying tables should be made three feet high at one end and only one foot six inches at the other, and about three feet wide and six feet long. After making the indentation the fruit is placed on the tables in the full sun for about two hours, when each one must be turned, which is done by taking them in the hand as before,

and making the indentation on the opposite sides. In this position they remain for two hours more, which will be 11 o'clock; the fruit is now shifted from this table to another, and instead of the stalks being turned down, as on the first table, they are reversed—the top for the bottom. Let them remain in this position for another two hours, when you take them and reverse the indentation again and turn them over at the same time; be sure and note how the fruit is turned and changed, for I have known of bushels spoiled through being allowed to dry a little too much. At 3 or 4 P. M. you take the fruit and pack it in baskets; but be sure and put the stalks downward, as you must understand that the fruit has been hanging up for thirty days, and the stalk end is pretty dry, and that is what this process is for—to send the moisture of the fruit to the stalk.

This process of drying on the tables takes three days, and must be done regularly. On the fourth day the fruit is taken up and the indentation made on the opposite side, and placed in boxes perfectly air-tight, with a little straw at the bottom of the box; they must remain in this box for about seven days, not less, and then you open the box, and if the persimmons are heated and sweated all must be taken out and dried for about one hour, and then put back in the boxes again; and in two or three days if you look in the boxes you will find that they have become white. This is the sugar from the persimmon as shown in illustration No. 4. [See engraving in frontispiece.] I do not think there is anything else to say about the preserving.

Some American advertisements say that a gravelly or light soil is preferable for the persimmon, and that the older the trees are the better is the flavor

of the fruit; “that the first or second year after bearing the fruit is somewhat astringent and contains no seeds; and as the tree grows older the fruit improves in size and flavor and contains seeds.” Now, in the first place, a Japanese never understood the nature of soil, and, as I said in my last, you can not find a farmer’s house or any house in the country without its persimmon and plum [loquat] trees; no matter what soil it is they grow and flourish. In the second place, as to the fruit improving with age, I can only say that as a grower of the fruit I have found in many instances that the first fruit on the tree has been the best in size and flavor. [So with our American orchard fruits.—EDITOR.] As to the fruit being astringent and bearing no seed for the first and second year, I have never seen nor been able to find any Japanese who had seen but one kind of persimmon without seed, and that is the “seedless variety,” one of the best flavored and largest fruited; the rest are all more or less seed bearers, and all more or less astringent at times, whether the tree is young or old, whether it is the first or the twenty-first year of fruiting.

[We can bear testimony to the excellence of persimmons dried by this method. The fruit in a consignment of dried persimmons received from Mr. Jarman was incomparably better than some bought in the Chinese quarter in San Francisco. The latter were hard, dry little lumps; the former, about the texture of ordinary dried figs, and declared by many to be much better than figs. In connection with the “seedless variety” (which, like all so-called “seedless” fruits, contains an occasional seed, or two, or three), Mr. Drake, of Yokohama, tells us of a betting game among the Japanese, which consists in betting on an uncut “seedless persimmon,”

whether it will contain no seeds, one, two, or so forth. The utmost ever contained is five. The Hyakume dried persimmon measures, shriveled as it is, 4 inches by $2\frac{1}{2} \times \frac{3}{4}$.—EDITOR.]

THE CAMELLIA.

By JOHN ELLIS, University of California.

The beauty of the flowers of this plant seem to be duly appreciated by man in all parts of the civilized world, for we find it decorating all our principal banquets of jollity and mirth. At the bridal altar it smiles a blessing and at the tomb of death it assumes a blush, so faint and pure that it seems to assure us that the "passed away" are immortally smiling upon us the radiant joy experienced in that most glorious realm in which they live. The beauty of foliage is no less attractive than the flowers of this plant, for the leaves are large, thick, and of a dark green shining appearance, and the general habit of the plant is good; there are but few shrubs that really claim our attention and admiration as much as the *Camellia Japonica*. Camellias are not confined to Japan alone, for they are also found in the eastern portion of the Himalaya, in Cochin China, and in a great portion of China proper. Two species, also, are found, the one in Java, the other in Borneo and Sumatra. The first species cultivated in European gardens was in the year 1739, or about that period; this was the single red flowering variety, or natural form of the species. But it was not until the year 1792 that any of the double flowered varieties were taken to Europe; then the double white and the striped were introduced there, both from China; they were shortly followed by the double red and other varieties. Many more were subsequently introduced, and the

consequence was the production of an almost endless variety of vastly improved sorts. The most marked among them are our double whites, the plain double, and the double fringed. The anemone-flowered, or Warratah Camellia, has broad petals forming a margin to a centre of smaller ones which are raised, giving the flower somewhat the appearance of a double hollyhock. Then we have a very striking one from Hongkong, the net-veined *C. reticulata*, the best species known, as to size of flowers and the striking character of its prominent veined leaves, the flower often measuring six inches or more in diameter, much resembling the flower of a *Pæonia*. *C. sasanqua* is commonly found in China and Japan; its seeds are crushed and an oil extracted from them by the Chinese; the flowers are small and white, much resembling the flowers of their common tea plant to which it is nearly allied.

From this base of supplies, together with the indefatigable exertions of our best cultivators both in Europe and America, has been produced our present glorious collection. And here we wish to be distinctly understood as stating that, in no place in the world have there been produced from seed better or superior varieties than by our own American nurserymen. In proof of this statement let us instance Mrs. Abby Wilderii, Mrs. Cope, and many others could be named, models of perfection in purity of form. We would also name another most desirable feature in all the American raised varieties, which is this, that they all will strike readily from cuttings. Indeed, so readily do these cuttings root that we have often taken plants of fine double sorts to ingraft on them double whites, such as *C. candidissima*, Kumes Blush, etc. In China the principal mode of

propagation seems to be that of "layering" for the increase of known varieties, but in America and Europe, where the fastidious cultivators object to the non-symmetrical form produced by such mode of increase, we adopt the preferable system of grafting and inarching. The leading growers of the Camellia, however, strike them from cuttings of a single bud having attached to it a single leaf, and made in the form here shown.



The time to put in such cuttings for propagation is when the young growth has pretty well ripened its wood, or the bark of the young growth presents a brown appearance. In the Southern States of the Union the Camellia grows into large trees, and we can not see why, here in California, our homes can not have groups and beds of the most gorgeous and diversified flowers and foliage of the Camellia as well as of the most common and incongruous Eucalyptus. We have seen them (Camellias) flourishing in many and varied situations in this State, some in northern and others in direct and open southern exposures. We say plant them, plant them out for decorative purposes in our open grounds, around our homes, our dwellings; for what purpose do we create homes if it be not for comfort and consolation? Yes, reader, our

home should be the consolation of the soul, whose flowers never fade. We have often thought that the Camellia was the most tenacious of life of the many plants known, looking green with its foliage and set well with flower-buds, and at the same time scarcely a living root to depend on for future growth. We have seen such plants by the hundred imported from China, and purchased by parties highly delighted, but as time rolls on the flower fades, and foliage dies, and the result of opinion and experience is that "They don't succeed well in California." Now let us remember that, bad training, bad organizations, seldom succeed but for a time; their final fate history shows. So with the plant: let us have a good beginning and a good training, and then if no accident occurs, we need not fear the result. Then we say, begin with small, healthy plants grown at home, propagated by our own nurserymen, and let alone the nondescripts of other nations and the fondness for the unknown, and give the preference to fact and security.

February 3d, 1879.

[We should be very much pleased if Mr. Ellis would add at some future time some advice on the proper treatment of Camellias in the conservatory. We feel sure many of our readers would thank him.—EDITOR HORT.]

THE PHACELIA GRANDIFLORA.

By MRS. C. P. BINGHAM, Santa Barbara.

The *Phacelia grandiflora* is a beautiful annual, which grows at an altitude of from one hundred to one thousand feet above the sea level; sometimes near the banks of streams, and often on dry elevations.

Last year I first saw plants on the 23d of April, and they were in bloom six months later. The plants vary in

height from one foot to four feet. The stalk is large, becoming woody and branching. The leaves are a bright green, doubly and irregularly incised. The flowers are in scorpioid racemes, corolla almost rotate, about two inches in diameter, of a pale lilac, with centre white, dotted with lilac. The plant is covered with viscid glands, which stain the hand that touches it; but its great beauty is a redeeming quality, and makes it desirable for cultivation.

A specimen which grew last year in a cultivated field, but a few minutes' walk from my dwelling, would have formed an attractive feature in any garden. The first time I saw this plant it was over three feet high, symmetrically branched from the base, and about two feet in diameter. Every leaf was perfect, and from the ground to the top were scattered, in great profusion, the gracefully coiled racemes of beautiful flowers. I visited it often, and it retained its beauty many months. It would have compared favorably with many of our cultivated flowers, and I should like to see it introduced in our lawns and gardens.

[The well-known *Phacelia congesta*, once a common weed in our valleys, but now fast disappearing before thorough cultivation, will give an idea of the coiled racemes of this flower, which uncoil as the inflorescence proceeds. This new *Phacelia*, which Mrs. Bingham describes, is an interesting plant, and she has kindly sent us some seeds to test in that place of many trials, failures, successes and secrets—the "Experimental Garden." In this connection we ask all our readers to try California wild flowers in the garden. Give them good treatment; they will amply repay you. Then write and tell us about it.—EDITOR CAL. HORTICULTURIST.]

GARDENS FOR CHILDREN.

By "A NEW CONTRIBUTOR."

Gardens and children have a sympathy and a fellowship. We hope that the parents among our readers have been wise enough to bestow the use of a plot of ground upon each one of their children. We do not at all insist upon its being large, indeed it is better that it should be small, but let it be in a good place and well prepared. Let its beds, be they more or less numerous, be carefully laid out, and good edging of board or some other material put around them. Let the beds be small, carefully adapted to the size of the child who is to be its happy owner, so that its little arm need have no difficulty in reaching across it.

Now do not make the mistake of planting this garden before you bestow it upon your child, but when all is ready take the little ones out, assign to each their bed, and tell them they shall have it all to themselves, and plant it to what pleases them best. This last is a very important item. I heard of a little girl who moved her garden from the place first taken at the foot, to the top of a hill, and carried water up the hill all summer, simply to avoid being advised about it. All children might not show so much resolution, but I think most would have something of the feeling. Of course if they ask advice it should be given.

Now if your children are old enough, provide them with a seed catalogue—for children the illustrated ones are probably best; tell them just how much money you can allow them for seeds, and await results. I promise you a great deal of pleasure in watching them while they are making out their lists.

Do you know what a very bewitching kind of reading these same catalogues

are? Especially when you read them with the knowledge that you have the money all ready to spend as soon as your choice is made. I have sometimes thought that a judicious use of seed and plant catalogues would drive novels out of the field, for they are so very charming.

But we are wandering, and must come back to our subject. Many and busy will be the consultations the little folks will have, and mamma and papa will be appealed to again and again to help them decide. Then, too, papa must help them, if they are quite little, in writing, and sending their order, and he will perhaps need some patience before the seeds come, for they will begin to expect them the day after the order is sent, and each day after, until their arrival, will ask for them.

But let him be patient; the benefit they will derive from their garden, the exercise in the open air, the knowledge of plants, and, more than all, the opening up to them of a new source of interest, which will never fail during the longest life, is worth the exercise of some, yes of a vast deal of patience. Said one who had spent a long life in the culture of plants: "It is an employment of which one never wearies, for you are always finding something new, and in the longest life will never have made acquaintance with all the treasures of the floral world."

To give to children a source of interest, and pure, healthful, refining amusement like this, is worth a good deal of effort on our part, and the outlay of no small amount of patience, and of all the money we can afford.

There will be for those children who have pocket money another benefit. They will have some better use for their money than buying candy. A new plant for their garden, or another paper of

seeds, will have such attractions that they will learn how much more may be accomplished by a wise than by a foolish use of money.

Try it, my friends, and when your little girl or boy comes running to tell you that there is a flower in their garden, don't be too busy or too tired to go with them and sympathize in their pleasure.

NEW PLANTS OF CALIFORNIA.

By J. G. LEMMON, Sierra Valley, Cal.

Few persons, even of the botanical profession, have an adequate idea of the great number of new plants in California. In preparing a catalogue of them recently for publication at the East, I was astonished, before half done, at the great number enumerated. I began by adding a short note or remark to the principal ones, such as the name of the discoverer, locality, and date, but before half through the catalogue would fill twelve columns of a common newspaper. In fact a full list would exceed three hundred species. A list of new plants properly includes not only those recently discovered, but also those so little known from imperfect specimens as that recent collection of fuller specimens has caused a new and perfect description to be made by some eminent authority. Following are a few of the most interesting selected from this list. The notes are omitted as being too voluminous:

Ranunculaceæ. — *Anemone occidentalis*, Wat.; *Ranunculus Andersoni*, Gray; *Ranunculus Lemmoni*, Gray; *Ranunculus oxynotus*, Gray; *Delphinium scopulorum*, Gray.

Papaveraceæ. — *Arctomecon Californicum*, Torr.; *Canbya candida*, Parry; (a commemorative genus).

Fumariaceæ. — *Corydalis Caseana*, Gray; (in honor of Prof. E. L. Case).

Cruciferae.—*Draba eurycarpa*, Gray.

Violaceae.—*Viola lobata*, var. *integra*, G.; *Viola aurea*, Kellogg.

Caryophyllaceae.—*Silene montana*, Watson; *Silene Lemmoni*, Watson; *Silene occidentalis*, Watson; *Silene pectinata*, Watson.

Linaceae.—*Linum adenophyllum*, Gr.

Aceraceae.—*Staphyllea Bolanderi*, Gray; *Glossopetalon Nevadense*, Gray.

Leguminosae.—*Lupinus confertus*, Kellogg; *Lupinus calcaratus*, Kellogg; *Lupinus Breweri*, Gray; *Lupinus Stiveri*, Gray; *Lupinus brevicaulis*, Watson; *Trifolium Kingi*, Watson; *Trifolium Lemmoni*, Watson; *Trifolium Bolanderi*, Watson; *Trifolium Breweri*, Watson; *Hosackia Torreyi*, Gray; *Astragalus carinatus*, Gray; *Astragalus Pulsiferæ*, Gray; *Astragalus Lemmoni*, Gray; *Astragalus Webberi*, Gray; *Astragalus Casei*, Gray; *Astragalus Austinæ*, Gray; *Astragalus Bolanderi*, Gray; *Lupinus Grayi*, Wat.

Rosaceae.—*Ivesia unguiculata*, Gray; *Ivesia Webberi*, Gray; *Ivesia Muiri*, Gray.

Saxifragaceae.—*Bolandra Californica*, Gray, (a commemorative genus); *Boykinia rotundifolia*, Gray.

Onagraceae.—*Epilobium brevistylum*, Barbey.

Umbelliferae.—*Sanicula Nevadense*, Gray; *Carum Kelloggi*, Gray.

Araliaceae.—*Aralia Californica*, Wat.

Rubiaceae.—*Kelloggia galioides*, Torrey, (a commemorative genus).

Compositae.—*Erigeron Nevadense*, Gray; *Antennaria microcephala*, Gray; *Whitneya dealbata*, Gray, (a commemorative genus); *Hulsea algida*, Gray; *Hulsea nana*, var. *Larseni*, Gray; *Hulsea Parryi*, Gray; *Senecio Greenei*, Gr.; *Senecio Clarkianus*, Gray; *Malacothrix Clevelandi*, Gray.

Ericaceae.—*Arctostaphylos Andersoni*, Gray; *Leucothoe Davisæ*, Gray.

Lobeliaceae.—*Palmerella debilis*, Gray (a commemorative genus); *Nemacladus longiflora*, Gray.

Apocynaceae.—*Cycladenia tomentosa*, Gray.

Asclepiadaceae.—*Gomphocarpus purpurascens*, Gray.

Gentianaceae.—*Gentiana simplex*, Gray; *Gentiana Newberryi*, Gray; *Gentiana frigida*, Gray.

Polemoniaceae.—*Gilia Paryæ*, Gray; *Gilia Lemmoni*, Gray; *Gilia lutescens*, Gray; *Gilia Larseni*, Gray.

Hydrophyllaceae.—*Phacelia Davidsoni*, Gray; *Phacelia procera*, Gray; *Nama Parryi*, Gray; *Lemmonia Californica*, Gray, (a commemorative genus).

Borraginaceae.—*Coldenia Palmeri*, Watson; *Eritrichium Kingi*, Gray; *Eritrichium Lemmoni*, Gray; *Cynoglossum occidentale*, Gray.

Convolvulaceae.—*Cuscuta salina*, Eng.

Solanaceae.—*Chamasaracha nana*, Gr.

Schrophulariaceae.—*Antirrhynum Kingi*, Gray; *Collinsia Greenei*, Gray; *Collinsia Childi*, Gray; *Collinsia Parryi*, Gray; *Pentstemon Lemmoni*, Gray; *Pentstemon Palmeri*, Gray; *Pentstemon Clevelandi*, Gray; *Mimulus Bolanderi*, Gray; *Mimulus Pulsiferæ*, Gr.; *Castilleja Lemmoni*, Gr.

Labiatae.—*Scutellaria nana*, Gray.

Amarantaceae.—*Abronia Crux-Maltæ*, Kellogg.

Polygonaceae.—*Eriogonum ursinum*, Watson; *Eriogonum Lemmoni*, Watson; *Eriogonum saxatile*, Watson; *Chorizanthe Palmeri*, Gray; *Chorizanthe Parryi*, Gray; *Hollisteria lanata*, Gray, (a commemorative genus).

Loranthaceae.—*Arceuthobium libocedri*, Engel.

Euphorbiaceae.—*Euphorbia Lemmoni*, Engel.

Salicaceae.—*Salix Geyeri*, Anderson; *Salix Lemmoni*, Bebb.

Coniferæ.—*Pinus albicaulis*, Engel.

Orchidaceæ.—*Chloræa Austinæ*, Gray; *Cypripedium occidentale*, Watson.

Liliaceæ.—*Calochortus citrinus*, Baker; *Calochortus clavatus*, Eaton; *Calochortus Greenei*, Wat.; *Erythronium purpurascens*, Watson; *Lilium Parryi*, Watson; *Leucocrinum montanum*, Watson.

Gramineæ.—*Poa Lemmoni*, Vasey.

Filices.—(new ferns), *Cheilanthes Cooperæ*, Eaton; *Cheilanthes viscida*, Davenport; *Cheilanthes Clevelandi*, Eaton; *Aspidium Nevadense*, Eaton; *Notholena Parryi*, Eaton.

Of these new plants there are found in Sierra Valley, 48 species; Lassen's Peak and vicinity, 34; desert region of north-east California, 13; Webber Lake and vicinity, 15; Yosemite Valley and vicinity, 11; mounts Lyell and Dana, 15; near San Luis Obispo, 12; coast near San Francisco, 11; coast near Santa Barbara, 6; near San Bernardino, 13; Mohave and Colorado deserts, 18.

Some of these have already gone into cultivation abroad, the highest priced one being the magnificent *Lilium Parryi*, which in England readily commands £1 sterling per bulb.

THE BLUEBERRY.

By JOHN MAYTIX, St. Helena.

Professor Gray says there are no true huckleberries west of the Rocky Mountains, but the blueberry, which is almost identical, differing but little in quality or habit of growth, is indigenous in a few localities along our seaboard, and in the shady glens of the Cascade range of mountains in Oregon. This delicious and highly prized fruit will soon disappear from the habitable portions of the Pacific Slope by the plow, or tramping of stock, unless some one comes to the rescue and makes an effort to bring it under the watchful care of our horticulturists.

We believe the blueberry would be much more profitable than the strawberry, or any other small fruit. A plantation once made, would be permanent; and would require but little care annually to continue it. We have read of huckleberries bringing as high as eleven dollars a bushel, and they were never lower than five dollars in the New York markets. They are very productive, producing from a pint to a quart to a bush. We think they might be planted one by four, or perhaps one by three feet apart. Whether they will bear cultivation of the soil, or require the surface to be kept in turf as found in the wild state, is perhaps yet to be determined by experiment; but that they can be grown, and profitably too, we have not the least doubt, and hope some of our more energetic fruit growers will be induced to give them a trial. Why so valuable a fruit, and one, we think, so easily cultivated, has been neglected so long by our pomologists and amateur cultivators, is a great wonder to us.

In their wild condition, on this coast, we have generally found them growing in a turf of shallow soil, overlying a wet retentive clay subsoil; but as the huckleberry is said to thrive through all grades of soil, and exposure, we doubt not the blueberry will succeed under varying conditions. If, however, any choose to give the huckleberry the preference, we doubt not the plants can be had from some of our Eastern friends. For pies, the blueberry and huckleberry take precedence over every other fruit. They are said to be easily preserved by drying, and retain their natural flavor better than almost any other small fruit. For canning they have no equal, as the writer can testify; retaining all the delicious fragrance peculiar to that fruit.

CULTIVATE CHOICE FLOWERS.

By W. C. L. DREW, El Dorado, Cal.

How often do we meet with persons who love and care for flowers, but who cultivate only the common varieties. The cause of this is a prevalent belief that the plants of the finer varieties are too tender and too difficult to keep over winter. This is a great mistake, and one which hinders the advancement and progress of floriculture very much. The flowers grown by florists are much nicer for house plants, bloom more profusely, and endure the cold and changes of temperature better than any of the summer bloomers. Indeed, it is for the production of winter blooms they are grown, and because the professional florist has his greenhouses and conservatories in which to raise and propagate them, the amateur in floriculture should not be deterred from embarking in their cultivation.

We are aware of the fact that many failures have happened among amateurs who obtained plants out of the greenhouse in the fall for window culture. This is not a good plan, and that failure generally attends such purchases is only to be expected, as plants from the greenhouse are too tender to transfer to the window, without being materially injured or retarded in growth. The better way, and the only way to be recommended to the unskilled but persevering amateur, is to commence in the spring for the winter's supply. Get small plants in thumb pots in the spring, about the time the professional cultivator usually commences to transfer his plants to the open air; transplant them to the border until the latter part of August, or first of September, then carefully lift and pot in suitable soil, when they may be placed in the window as soon as recovered from the effects of

transplanting. Of course, this would not be a commendable plan for treating some kinds and varieties of plants, especially rapid growing ones, as they would become too large by fall to be serviceable, or even capable of being repotted and transferred from the open border to the window successfully. But for such as Abutilons, Smilax, Geraniums of the choice strains, Begonias of the winter blooming varieties, and Fuchsias, and other plants which require some little time to get fairly started, the cuttings should be started in the spring, to be a nice size for blooming in winter.

We are not of those who would discard any of the old-fashioned flowers of merit; but we think that if some of the finer and more profuse bloomers of the florist were introduced into the room window, there would be more taste in the selection of plants, and more pains taken in their cultivation.

That floriculture, if not one of the fine arts, is near to being classed among them, is an undisputed fact; but we can hope for no advancement until we educate our amateurs up to a full appreciation of the beauties of the choicer plants. When amateurs understand that it is quite as easy, and attended with much greater gratification, to cultivate the finer varieties, then we may hope to see the day when floriculture will occupy its proper sphere.

ARBORICULTURE.

By GEORGE RICH, Sacramento, Cal.

How, in the last quarter of a century, the hand of the pioneer has changed well remembered scenes! Here and there in the broad valley, groups of trees then presented themselves, of nature's handiwork, that cast their shadow on the rolling surface; roaming cattle

glad to get a shade, and feel the cooling breeze in summer months, would here escape the heated norther that came bearing down the valley, leaving its blight at every touch. With the exception of the belts of timber along the river courses and the isolated groups on the plains, the broad surface lay denuded and bare, showing a vast area untouched by human hands—a pastoral surface for sheep, cattle, and horses to roam at will. Look now with telescopic eye over its broad surface, and it shows at a glance how civilization with the march of progress has changed the scene to one of thrift and culture—trees, vines, shrubbery, fruits, and flowers scattered in untold numbers. The result of cultivation, the growth and shelter has had some little influence on atmospheric conditions, but not much in comparison with that of denser growths in other parts of our State. The good that is already seen should encourage culturists to broaden the limits of cultivation. Dr. John A. Warder, of Ohio, states that “one-fifth of every farm might be devoted to trees, forming belts, and improving wood land.”

John Lawrence, author of the once popular *Gentleman's Recreations*, a work over one hundred and fifty years old, gives his testimony as follows: “One great cause of the want of fruit in many gardens is a lying too much open and exposed to the winds, which, in many parts of the year, make terrible havoc and desolation, not only blasting the fruit in the spring, but by chilling and starving the fruit all the summer, so as to hinder it coming to any due maturity.” The distinguished meteorologist, Frederick Daniels, adds, “that in seasons of extreme dryness, tender fruits are much more liable to injury, and that artificial shelter by means of walls, palings, hedges, or evergreen

screens, that will break the force of the blasts, are the most efficacious methods of preventing the evils of excessive dryness.” Plant trees for use; their culture is second in importance to that of wheat, corn crops, breeding and raising of domestic animals; then plant the Chestnut, Elm, Spruce, Silver Maple, Cypress, Catalpas, and those that make quick growth, and form a break from the sweeping winds. It has been pretty well tested that three things are necessary to reinstate the open denuded plains to a state of rich fertility, viz: cultivation, irrigation, and shelter from the unrestricted sweeping gales. These would change the scene into luxuriant woods, verdant pastures, and fertile meadows, and are, no doubt, the methods intended by nature for the improvement of soil and climate in the temperate latitudes. Red Cedar, according to Gray, has the greatest climatic range of any woody plant in America. It is the one evergreen that the drought of the plains can not kill. It thrives in a great variety of soils. The Cypress endures drought and heat with serenity. For low fences, for shelter, the Euonymas, Osage Orange, Honey Locust, and Myrtle answer well, with little care and attention. Facts verify the statement that many of our diseases in fruit trees, and imperfections in the products, can be prevented by sheltering hedges and plantations. We might add a few points still farther. A writer on horticulture states, “that the decline of many varieties of fruit once successfully grown, is not attributable to the exhaustion of the elements of the soil, but the deterioration is much more largely due to the removal of those protecting screens (the forests), which once sheltered not only from extremes of cold, but also from extremes of dryness.” The screens and wind-breaks then are of use to

orchards and crops, both in winter and in summer, and growing seasons. (1) They produce a greater degree of atmospheric humidity, consequently a more regular supply of rain. (2) They modify sudden changes of temperature. There is a growing opinion, founded on experience and observation, that many diseases of plants result from severe frosts, and extreme changes of temperature through the winter months. The frost acts mechanically upon vegetable tissues by expanding their fluids, and bursting the cells, or vessels, in which they are inclosed. (3) They prevent the extraction of moisture by evaporation when in contact with the cold atmosphere which often proves fatal. (4) They shut off these dry winds whose effects are seen in the shriveled and dried appearance of the buds and bark of young growth (more so than in the maturer), which, when juices are preserved by proper protection in winter, shoots forth more vigorously and ripens fruit earlier—the greatest desideratum in the mind of the cultivator.

The effects of destroying forests are noted in Upper Egypt, Syria, and Arabia, in the denuded uplands of Germany, the exposed mountain districts of Scotland, Asia Minor, Northern Africa, Alpine Europe, and the Apennines and Pyrenees in central and southern Europe, and in the United States, our Sierra Nevada. Touching the best means of protecting plants from freezing, and adapting them to a climate less warm than their own, the following, taken from Lindley, is pertinent: "The mechanical action of frost may, however, undoubtedly be guarded against to a great extent. It is well known that the same plant growing in a dry climate, or in a dry soil, or in a situation thoroughly drained through winter, will resist much more cold than if cultivated in a

damp climate, or in a wet soil, or in a place affected by water in winter. What ever tends to diminish their conducting power, diminishes with it their susceptibility. This is an invariable law, and must consequently be regarded as a fundamental principle in horticulture, upon attention to which all success in the adaptation of plants to a climate less warm than their own will essentially depend. The destructive effect of frosts upon succulent parts of plants may thus be accounted for, independently of the mechanical expansion of their parts; indeed, it is chiefly to that circumstance that the evil effects of cold in spring may be ascribed, for it has been found that trees contain nearly eight per cent. more of aqueous parts in March than at the end of January, and all experience shows that the cultivation of plants in situations where they are liable to be stimulated into growth, and consequently to be filled with fluid by the warmth of a mild protracted autumn, exposes them to the same bad consequences as growing them in damp places, or where their wood is not ripened—that is to say, exhausted of superfluous moisture, and strengthened by the deposition of solid matter resulting from such exhaustion."

A HINT ON BEDDING OUT.

By G. HOWATT, Diamond Springs, Cal.

A little advice to your amateur readers on this matter may not be out of place. It is customary with the greater number of people to purchase a pot plant only when it is in bloom. When remonstrated with, they say, "If we do not see it in flower, we do not know what we are getting, and those florists will cheat us." They are right and they are wrong. A florist will not cheat them; no man that studies his interest will do that, but those plant ped-

dlers will cheat them. They buy from the florist to sell, they (the venders) hardly knowing the difference between a Japan Lily and a Dahlia, and no matter what you may ask them for, they will reach their hand for it, and give it. True to name? Certainly. And they will tell you how to grow it. Eschew all such if you wish to have good plants.

A fact that came under my notice : A peddler took into market a load of Skunk Cabbage just coming into leaf, and said they were Dutch Bulbs that he had got from Holland. He was selling rapidly at one dollar apiece. An editor of a paper—Vanderhoben, (hope he may read this), told me he had bought five and sent them home; told me to hurry up or they would be all sold. When I got to him, he was having a rapid sale. I told them, but it was no use; they kept on buying.

Order your plants from a florist with this P. S. : "Send all my plants out of flower." Should you get them in flower cut all your flowers off before planting whether of your raising or bought. If the flower is left on, all the strength of the plant goes to the flower, to the detriment of making young wood. By encouraging this young wood, when your plant comes into flower, you will have one mass of bloom hiding the leaves, whether in self-beds or miscellaneous planting the result is the same. Try it and you will be so well pleased with the experiment as to ever after follow it. Of course this does not apply to plants plunged in pots in the open ground, but to all bedding out plants.

PRUNING FRUIT TREES.

By M. P. OWEN, Sequel, Cal.

MR. EDITOR :—Recognizing the fact that every occupation, intelligently and economically pursued, that proves to be a benefit to the party engaged in it,

is also a blessing to the community at large; and, consequently, that any information that will help to advance the interests of any laudable industry is so much added the blessings of the community, I also recognize another fact, that a humble laboring man may sometimes impart very useful knowledge, in any given pursuit that he has had practical experience in. Now with this preface, I venture to offer to your intelligent readers a few hints on pruning fruit trees, as I have had a good deal of experience in the business; and have come to the conclusion that next to good cultivation, pruning, if timely and properly done, has more to do with the success of fruit growing than any other one thing. "Well," says one, "I have no doubt but that proper pruning is a very good thing, but there are so many different theories about it, I do not know which to adopt." Now, that was my trouble, when I commenced fruit growing, and I concluded to make observations, and experiments, and learn for myself. And now I propose to give you a little of my experience, as I consider *facts* worth more than *theory*.

Well, some twenty-five years ago, a nurseryman employed me to help him set out some fruit trees for himself, taken from his nursery, and they being well grown two year old apple trees, they had very heavy tops, with from two to four large, long, thrifty limbs, of equal size, growing out from the top of the first year's growth, forming one or two forks on every tree; and as I noticed that he was leaving them just as they came from the nursery, I asked him if he intended pruning them, and he said not, as he believed in letting nature do her own pruning. It occurred to me that he was wrong, but as he had been in the business for some time, and I had just begun, he had the advantage

of me, and I thought I would note the result, and experiment a little on some trees that I soon after set out for myself. Having heard a pretty successful fruit grower say that trees did better to have all the limbs cut off at setting, and to be cut back every year after for several years, until they got to bearing well, I thought I would try it, as it looked reasonable to me. Well, here is the result: my trees made a better growth than his, and put out more limbs along on the body of the tree, nearly to the ground, so that I had a chance to form a proper head nearer the ground than if I had not pruned when setting out. And by this means I could select limbs at proper distances and in opposite directions from each other to form the head, and cut out the balance, so as to give all the nourishment of the tree to the limbs that I wanted to remain; and by this means I could form a shapely and well balanced head. I continued the pruning each year, and at all times in the year, when I saw limbs growing where I did not want them, or getting out of shape; and in this way I made my trees grow strong, and in good shape. But not so with my neighbor's trees; by the time his were in bearing, they had run up very high, with long, "switchy" limbs, and a good many forks. In the fall of the fourth year of their bearing (the first full crop), there came over our orchards a very heavy wind, that destroyed about one-half of his orchard in one night, in consequence of the trees being so tall in proportion to their size and strength, and being so badly forked, that they split all to pieces. But my trees were able to stand the storm without losing one, and they were as much exposed as his were. But by shortening in, and thinning out, and avoiding forks, I have got my trees in such condition that they

could stand both the wind and their load of fruit, without breaking or bending out of shape. But if you set out yearlings you have a better chance to form a proper head for your orchard trees than you would with two year olds.

[We are glad to receive the above, and hope to have the subject further discussed; for we are well convinced that much loss is sustained by orchardists both from lack of pruning, and from improper or untimely pruning. We should like to have specific opinions on what is good pruning from our practical fruit-growers.—EDITOR.]

FLOWER HINTS FROM INDIANA.

By L. B. CASE, Richmond, Indiana.

I have read every page of the HORTICULTURIST for the past three months with much profit and a great deal of pleasure, and sometimes feel as though I should like to add a note, but then I would much rather see the HORTICULTURIST an exclusively Californian publication.

In your list of Winter Blooming Roses I do not see the White Banksia named, and as I have it in one of my greenhouses (planted in the natural soil), I can testify to its great usefulness. We have it in bloom for cut flowers in January, February, and March, and find it a very free bloomer; flowers rather small, pure white, very double, fragrant and in clusters. Our old plant is nine years old, and the stalk is about two inches in diameter; and as it is a very rapid climber, it soon reached the rafters of our greenhouse, and now it requires severe pruning to keep it in bounds, but if planted outdoors in your genial California climate, it would soon be immense. Altogether I consider it one of the best climbing tender roses.

Another item of interest to me was

your article on the Japan Quince (*Cydonia Japonica*). Of course I have Japan Quinces, for all plant lovers must have it, and was much gratified to notice its pseudo habit last summer. Last March (1878) we had quite a warm spell and our Japan Quinces flowered very early, but a very cold snap following before they had finished the display was not as good as some other years; but in May they came into bloom again, and this time set abundance of fruit, which ripened in September, and immediately the same bushes put out a third display of flowers, continuing to produce perfect flowers until late in October—even through light frosts. Of course the flowers were not as abundant as in early spring, but there were enough to make quite a respectable showing. Now this periodical habit of blooming—for it is no very uncommon sight to see them bloom in spring and fall—I imagine could be improved by skillful propagators into a permanent feature, if grown in a cool or moist situation; and I think sometime we shall see our nurserymen advertise *Monthly Blooming Japan Quinces*.

I am pleased to see you advocate the subject of a California State Horticultural Society, and hope you will *stick to it* until you accomplish your object. It is certainly the best means to promote horticulture, as it brings together so many practical cultivators that talk over their different varieties, different modes of treatment and soils, that all return home after such a treat well repaid in information for the cost and trouble.

In the January number you give us a cut of one of California's strange gems, and I would enjoy a similar treat in each number—nothing but native California—and I know I speak for all readers east of the Rocky Mountains, es-

pecially those who have never had the pleasure of a trip to California, or even only a hurried one.

Richmond, Ind., March 15th, 1879.

[We have had many pleasant letters, but this, from Mr. Case, pleases us, because we know the character of his own work in his remarkably original catalogue. We would say that the *Banksias*, both the white and the yellow, rank among our best spring and summer bloomers, and are wonderful climbers. We hope to see these thornless beauties universally planted in our country gardens. But they lose their leaves, and take a rest in winter—at least in Alameda County they do. Nor have we ever seen a *Banksia* blooming in winter except in the greenhouse. We hope some hybridizers will take hold of the Japan Quince. And we are bound to have a Horticultural Society, in the fullness of time. Last of all, we hope, some day, to have some flower notes from our genial correspondent of Richmond, Indiana.—EDITOR HORT.]

Correspondence.

[The editor of the CALIFORNIA HORTICULTURIST cordially invites all persons interested in any branch of horticulture to send practical questions and notes of their own successes and failures. A brief, undorned statement of events in one little garden may often prove of universal interest. Short notes from busy people, all over the Coast, will make this Department fresh and valuable.]

PROF. NORTON'S ARTICLE.

EDITOR CALIFORNIA HORTICULTURIST.—
Dear Sir: The February number of your magazine contains an article from the pen of Prof. Norton, which ought to be read by every person in the State. It furnishes themes for many a sermon, which should be preached, not only from every church pulpit but from the house-tops.

The first paragraph of the article referred to has such a direct and perti-

ment application to the metropolis of California, that it amounts to a truism. "I am the State" is written over its portals.

San Francisco holds the key which can open the channels of productive industry throughout the length and breadth of this great State: that key is capital—and it is not doubted that enough is to-day stored in San Francisco to meet every requirement, and set in motion the brain and muscle of the State. But the mania for speculation in stocks, when anticipated profits are supposed to compensate for great risks, keeps this vast capital in speculative channels.

The people have been educated to do just as they are doing, and this generation can not be changed—it may be modified, and the extent to which this modification may be carried depends largely upon the educators of the rising generation. How few of the educators of to-day improve the countless opportunities which their profession affords them, to impress upon the minds of the boys and girls committed to their care, the comforts which may be gathered around a home, or to picture to them an ideal home, not colored beyond attainment, even by those who may start with almost bare hands.

However much the ideal may overreach the home surroundings, to which night, or, at farthest, vacation brings these prospective heads and centres of homes, they can but see where the contrast is and how it may be realized.

Our beginning on the Pacific shore was with the bare necessities of existence, but there have been constantly added creature and home comforts, as fast, perhaps, as could reasonably be expected, for the spirit which incites one person to plant fruits and flowers and to ornament the home with na-

ture's adornments is "catching," but this method is too slow.

Every school in the land should be vaccinated with the pure virus of progress, which shall ultimate in the building of rural homes not in name only, but in essence, surrounding them with every comfort and luxury possible to the locality, and to which, when absent, pleasant anticipations conjure a return—where fruits in their season shall be the rule and not the exception.

To attain to this point is worth striving for; but far more may be accomplished by the application of science and mechanics, which this age has brought to such perfection that the fruits of summer may be had in winter, with flavor scarcely impaired.

How to build a *home*, should be a portion of the education of every boy and girl in the land; they should not be compelled to learn it single-handed and by laborious and time-taking experiments, thus wasting the most enjoyable portion of life. There are none so rich that they may not be poor, and then comes the necessity for building with one's own hands what before could be purchased; and fortunate indeed is the man who can accomplish it. Where one does it, a thousand sink to wretchedness, and all for lack of an education which is due to every child in the land.

Who can calculate the value of comforts and luxuries, which will be added to each family when the HORTICULTURIST shall be read and its suggestions carried into practice during the coming year? The face of the State would be changed if even one copy should go to every neighborhood. If the sounds which come up from peaceful homes, where comfort looks out from every window, could be echoed from every pulpit, what a change might be wrought? There is too much preaching against

what is evil, and too little in favor of what is good, except that good has special reference to the soul. Let comfort surround every bodily sense, and he who looks after the welfare of the soul will find his task much lightened. O! Preacher, cry aloud, that the land may be filled with homes, and the homes may be filled with peace.

Yours,

FRANK A. KIMBALL.

National City, Cal., March 5th, 1879.

THAT FIFTEEN MILE AVENUE.

Mr. White, of Riverside, whose interesting communication was given last month, now sends us some additional information for which we are heartily obliged. He says: "In regard to our avenue it is fifteen miles long and one hundred and thirty feet wide, with a row of Peppers down the centre, and Blue Gums on each side. Only two and a half miles of the avenue has been planted out, and this runs through a succession of Orange groves a mile wide on each side. My place extends one-fourth of a mile on the avenue, which is called Magnolia Avenue, because at every half mile where the streets intersect the avenue six Magnolias are planted. So much for the avenue and its surroundings. As I wrote you in my last, I desire the most ornamental tree I can obtain to replace the blue gums. Now we have a dry climate, and have to depend upon irrigation, and do you think the Magnolia would do well with us? Those we set out two years ago have grown but little, but we may not have given them the right treatment, and my only objection to that tree has been its slow growth; still as it would correspond with the name of the avenue, I should prefer that tree if we could make it a success. What treatment shall we

give it? Should we enrich the soil, and keep it very wet?

"In a recent number of the San Francisco *Bulletin*, a writer on the 'Trees of the Future,' says: 'As a purely ornamental tree the Magnolia stands at the very head of the list, and that it is a rapid grower when once established.' Is this the fact? He says 'among foreign conifers we must give the first rank to the Cedrus Deodari or Sacred Cedar.' Also that 'another conifer of surpassing beauty is the Cryptomeria Japonica; it grows to the height of two hundred feet and is very unique in appearance.' 'P. Densiflorus, from Japan, is a handsome tree with massive head and very rapid grower.' Are you acquainted with these trees and do you still advise me to take the Magnolia? In case I take the Magnolia, how would it answer to have a different tree, one on each side of the entrance to the grounds, say the Deodari Cedar, or Cryptomeria Japonica? This row of trees I shall set on the outer edge of the side-walk, which is twenty feet wide and inside my grounds. I want also an ornamental evergreen hedge. I want the handsomest hedge I can obtain, and I don't know what to employ. I don't want the Monterey Cypress, and some of the pines we have turn brown, and, of course, don't want one to do that. I see the different nurserymen have in their catalogues the Siberian Arbor Vitæ, Golden Retinospora, Euonymus Japonicus, Privet, etc. What, in your opinion, would be a handsome hedge in contrast with the orange tree background? It must be quite hardy, as we have frost here. How far apart ought the hedge to be planted, and if I take the Magnolia how far apart would you advise planting them? As I shall follow your advice in the selection of both tree and hedge plant, I hope you will be kind enough

to enlighten me upon these points. I want the hedge to grow about four feet high.

Yours truly,

"ALBERT S. WHITE.

"Riverside, Cal."

This letter, if read in connection with that previously sent by the same gentleman, will give our Eastern readers a glimpse of the gardens which labor and irrigation ditches are making in parts of southern, or semi-tropical, California. A fifteen mile avenue will be a grand affair. Think of massive Oaks a century hence, still young and vigorous. Think of Magnolias in one unbroken wave of bloom, fragrant and glorious for fifteen miles. Think of purple-leaved Beeches—but the atmosphere is probably too dry. Think of Cedars, Cryptomerias, Grevilias, with light drooping branches, trembling in the glad winds, and the clear sunlight. Fifteen miles of possible glory, hid now in brown earth. Yes! it is a hard task to rightly choose.

We have the feeling that, for such an avenue, in such a climate, the best class of trees from which to choose will be the deciduous division. Happening to meet Mr. W. B. West, the nurseryman, of Stockton, we consulted with him on the subjects mentioned in Mr. White's letter.

Mr. West writes us as follows :

"EDITOR HORTICULTURIST—Sir: I have looked over Mr. White's letter, and think for the avenue the Magnolia Grandiflora would be too slow. In this country the dry air is perhaps as much against it as the want of water in the ground; for a lawn tree where it could have extra attention it grows much better. The Grevilia Robusta does very well on my place, without water; it grows slowly, which makes it stand the frost better. I think for an avenue the trees should be some large deciduous

kind, such as Elm, Walnut, Pecan. Evergreen trees become too monotonous. They also crowd the side-walk, and obstruct the view. Mr. White says the 'Monterey Cypress gets red in winter.' He objects to trees that do so, and still mentions the Siberian Arbor Vitæ, Retinospora, which are the worst of that kind. The Euonymus Japonica is beautiful when it grows well and even, but it is apt to be uneven where the soil is not alike—that is, alkaline spots. The Privet is not so much dependent upon soil; it will grow anywhere. The Chinese Arbor Vitæ is the best hedge plant that I know. Everything about it turns red in the winter for about a month, and then is a beautiful green. It grows well in all kinds of soil, and with me will do without water. I have an improved variety, between the golden and the common. The only objection to the Privet is its dark somber color.

"Yours,

"W. B. WEST.

"Stockton, Cal., March 1st, 1879."

This covers most of the ground. The M. Grandiflora is becoming very popular in Alameda County, and elsewhere, but its great cost is much against its use for so extended an avenue. It needs water—and prefers a moist atmosphere. Pot-grown trees are not satisfactory. Trees well grown in the open air, and sacked early, often make a surprising growth when they have become well established again. It has no superior as a lawn tree, but we should call Walnuts and similar trees better for avenue purposes. The dark color of Japan Privet does not seem to us objectionable.

Magnolias need rich soil. It would look well to have the cross avenues, leading to other grounds, of some different kinds, as recommended by Mr. Ellis, some months ago. A pair of Deodari Cedars, or Cryptomeria Japonicas,

at the entrances would in time become grand objects. The hedge plants may be set from two to four feet apart, according to size, and haste of planter to obtain a solid wall. We should prefer to trim in a rounded shape, with no sharp angles, and for so long a hedge, more liberty of outline would be expected than in a small city lot. We should like to hear from others on this avenue question.—EDITOR HORTICULTURIST.

SOME MORE CHOICE CONIFERS.

EDITOR HORTICULTURIST—Sir: I was very much pleased with the article on Conifers, by W. B. West. Such articles are just what we need here, because if the merits of these beautiful trees are brought prominently before the public, it will encourage people to plant them more extensively. For my part, I should like to have the list more extensive, as there are many varieties which can be well grown here, prominently among which would be *Abies Hordmanniana*, a native of the border of the Black Sea, and a most majestic tree, which succeeds well in this locality. *Abies Menziesii* is another beautiful tree, and a native of this coast, which does well here.

It is to be regretted that such a fine variety as *Abies Nobilis* does not succeed here, and if *Picea Pinsapo* and its variegated form could only be grown here, how charming our gardens would look. There are, however, the species of *Libocedrus*, one of which (*decurrens*) is a native of this coast, and makes a fine tree; then comes *Libocedrus Chilensis*, and *L. Chilensis viridis*, the foliage of both is very graceful—the former of grayish color, and the latter of bright green; the foliage looks as fine as a *Selaginella denticulata*. The list of the Cedars may be increased by the fol-

lowing varieties, all of which are very distinct: *Cedrus Deodari robusta* in habit of growth is like *Cedrus Deodari*, but more robust, and the needles are twice as long. *Cedrus Deodari crassifolia* is a most beautiful variety, as yet very scarce; the needles are only half the length of the needles of *C. Deodari*, but they are very thick and of bluish color, yet the tree is not so compact a grower as *C. Deodari*. *C. Deodari viridis*, as its name indicates, is of a bright green color. *Cedrus Atlantica* is a most vigorous variety, differing from *Cedrus Libanii*, in having shorter needles, and a more upright style of growth.

Cupressus gracilis is worthy of a place in any garden, the habit of growth being most symmetrical, and the tint of the foliage a pleasing bluish color. *Cupressus elegans* is also a fine variety, but if raised from seed is liable to sport very much. The best way of raising it is to pick out the best formed plants from among the seedlings and graft them on other varieties of Cypress.

Cryptomeria Japonica, and *C. Lobbi*, are very fine trees, and should be grown more here, as they make fine specimens and are suitable for large places. There are also some varieties of *Araucarias*; among them may be mentioned *A. Bidwellii*, and *A. Brasiliensis*; both are hardy in the interior of California, and grow rapidly. The only trouble with them is, that they do not like to be planted in wet places, and if it becomes necessary to water them, great care should be used not to give them too much, as they will get yellow.

We must not forget the *Taxus*, although they are of slow growth, yet they look quite well, and would be adapted for small places on account of their occupying but little space. The

following are all distinct, and they will succeed well in the hot sun of this climate. First may be mentioned *Taxus pyramidalis*, of an erect habit of growth, it having longer leaves than *Taxus Hibernica*, and being of a darker color than *Taxus elegantissima*, which last is a fine variegated variety, the leaves being of a golden hue when growing. *Taxus aurea* is also a fine variety. Then there are silver-leaved kinds, and such as *adpressa*. *Clyptostrobus sinensis pendula* is another fine coniferous tree, but it may not be called an evergreen, yet there is hardly a tree more striking in effect in summer. The foliage is light and airy, and the habit of the tree, which is weeping, gives it a charming appearance if it is planted upon a lawn, where no other tree can compare with it.

Yours truly,

CHAS. I. HAETTEL.

THE OLD TROUBLE.—Mrs. A. J. S., San Francisco, has kindly sent us a fern leaf which has three specimens of scale on the under side. She says: "I have never obtained much benefit from the Eastern publications which we take, and I had to unlearn most that I knew when I came here. I have had a small conservatory for fifteen years, and have learned some things by experience, but I find the insects very troublesome, especially the scale."

We remark that the specimens of scale were quite too large and healthy to be pleasing. There is something hateful about these expressionless, insidious destroyers. What should we do? Well, in the first place, separate the infected ferns from the healthy ones, so as to avoid as far as possible any further spread of the evil. Next, proceed to cut off and destroy any old fronds whose beauty is past, or per-

ishing. At this season the young fronds are growing rapidly. Examine underneath, and wash off any scales which may appear with warm soap-suds and a sponge, holding the leaf in the hand. It is a little troublesome to destroy the old, hard scales, but with patience this can be done. They must be fought while small and easily conquered. Eternal vigilance is the price of healthy ferns, and of healthy conservatories. We hope our correspondents will not let this subject rest; it is a fruitful one, and has not yet reached its limits.

ROSE TREES ON THE LAWN.

EDITOR HORTICULTURIST—Sir: Some years ago an English journal recommended the culture of the rose on the lawn and pleasure grounds as a standard. "Few persons," it stated, "are aware of the magnitude to which the rose may be grown, or the splendid effect it can be made to produce on a lawn or pleasure ground; yet with a sufficiently strong stem, and a system of careful and patient training, there can be no reasonable doubt but that the standard roses could be grown to the size and form of the ordinary examples of the Weeping Ash, having the branches all produced from the top of a single stem, and flowing downward on all sides—a very ornamental object for a lawn." It may also be observed that the construction of a comfortable seat round its stem would form a cool and fragrant retreat during the hot days of summer. I do not know whether such effects have ever been produced on this coast, if not, it is certainly worthy a trial, especially in the coast and bay counties where the rose thrives so luxuriantly.

JOHN MAVITY, St. Helena.

[Our correspondent makes a valuable suggestion. Let those who can spare

the room have a rose tree. We would suggest taking, next winter, a cutting of some strong-growing variety, cutting out all the buds except one or two at the top, and planting where it is to remain. By this means suckers will be avoided. When it grows, select the best sprout, stake it up at once, cut off other sprouts and all branches until the desired height is attained. Then bud, if you wish, several good running roses in the top, to form a weeping rose tree. Keep the ground well manured. Soap-suds are splendid for roses.—ED. HORT.]

MANURE FOR BULBS.

Mr. G. Howatt writes us a letter about the treatment of lilies, on which subject he differs from Mr. Drew, whose article appeared in the January number. He goes on to say: "All the lilies that I have ever flowered, or heard of, require a very rich soil. We prepare the ground for herbaceous lilies and bulbs as follows: Excavate your bed, or beds, thirty inches deep, throwing the surface soil on one side, and the sub-soil on the other. Cart in enough surface soil from elsewhere to fill the bed. Use cow-manure, which is the coolest and best for horticultural purposes; if you have not that, use manure which has been in the hot-beds. The lilies grown in this compost will be larger and better than those grown in any other way. I have grown the best Tulips and Hyacinths, the Japan Lilies, the fragile, lovely Lily of the Valley, Crocuses, Anemones, Oxalis, Ranunculuses, Scillas, Crown Imperials, Iris, Jonquils, Snow Drops, Amaryllis, Tuberose, etc., all in this same compost. Your readers need not be afraid to use manure on their bulbs. The finest hyacinth I ever saw was grown by an amateur—a mechanic—in the edge of his rosebed, and heavily

manured every year with sheep-manure. The truss was eight inches through!

"In Europe we erect Marque tents over bulb beds, to shade them from the sun, and when they are done blooming we put out our foliage plants; so the bulbs, it will be seen, must be planted so deep that we can stir the surface without injuring them."

A MISTAKEN KINDNESS.—One of our lady friends writes to us from Denver-ton, Solano County, to tell us about her Smilax. She says: "I purchased a new Smilax bulb last October, and it sent up four sprouts which grew several feet in length without any leaves. A friend who has had great success with indoor plants told me to cut them off. I did so, but they have not grown since." Now, in our own experience, only an unusually thrifty Smilax will make a straight leafless growth for several feet. If they had been left alone, and proper care and nourishment given to the plant, all would have gone well, and there would soon have been an abundance of leaves. After the leaves of a Smilax begin to turn yellow, and the blossoms have come and gone, it is a good plan to cut it back, water with a sparing hand, so as to give the root a rest, and wait until it starts a fresh growth.

HOW SHALL SHE GROW FUCHSIAS?—"I ask some of the numerous readers of this magazine, to give me directions for the cultivation of this beautiful and choice flower. I have tried in vain to cultivate it. I have never succeeded in raising but one, and I can not guess the reason; my neighbors have them, but they do not seem to grow much better than mine. It is a flower which I admire more than any of the rest which I have; and it is also the most difficult to grow. I read the article in the January

number, entitled "Lily Culture." It was what I have been wanting to know for some time, as my lilies did not bloom well. I see now what the reason was; I transplanted them every spring. I will profit by the kind and useful directions. Now if some experienced florist will take the trouble to publish in this magazine, the directions for the cultivation of the Fuchsia, I will be ever grateful."—H., North Columbia, Cal.

EDITOR HORTICULTURIST—Sir: The rain gauge marked March 2d, .16; 3d, .50; 4th, 3.25; 5th, 4.75—or 8 inches in 48 hours—6th, 1.15; total, 9.81 inches. We have had one foot this storm, so we do not suffer for want of rain. I was shut up in the Grand Jury room, but could look out of the window and see it coming down. The peach trees are not in bloom yet with us, nor Languedoc Almonds. The last number of the HORTICULTURIST was a Baptist, as it came to hand as though it had been where there was much water, and was pretty wet.—N. WAGENSELLER, Ukiah.

THE CALIFORNIA HORTICULTURIST.—Our correspondent, Mr. Charles H. Shinn, became the editor of this publication on the first of this year. Mr. Shinn is well acquainted with the needs of horticulture on the Pacific Coast. In no country that we know of has horticulture made such rapid progress as it has done there; there are now many beautiful gardens in that country, while about the time of the first London Exhibition there was not even one.—*London Garden* of Feb. 1st, 1879.

We feel that it is hardly necessary to call attention to the large amount of original matter in this number. The change of type for shorter articles gives us much more room, and also improves the general appearance of the magazine.

Editorial Department.

EDITORIAL WANDERINGS.

In the last days of February, we saddened our broncho, and turned his head eastward from Niles, through the broken hills and past the solitary peaks of the Coast Range. It was a region of grass, flowing in emerald waves across the rounded heights, but it was not yet a region of flowers, although a practical eye could detect the spatulate leaves and low tuft of the Dodecatheon, and the drooping narrow leaves of many a mountain bulb. Flowers were doubtless hidden in the tufted grass of the sunnier slopes, but as yet they were unrevealed. Along the creeks the willows cluster, and their graceful boughs droop, bright and sweet with blossoms, trembling with the wings and songs of murmurous hosts of bees, shining with the fallen dew of heaven, and the spray from the lovely mountain stream. In the old romances of Arthur and Charlemagne, the level lowlands only are regions of the willow. But here the willows trace our streams to their secret sources, their red masses of tangled, fibrous roots sway loose in the stream, or shine on edges of slippery rock, while oak and sycamore rise in tall shafts above the silver leaves of the willow.

Three miles we wind along the cañon of the Mission Creek, before we get a glimpse of Suñol Valley. The hills we pass are used only for grain and grazing, and are farmed mainly by Portuguese, at least near the county roads. The soil is strong, and reasonably abundant for orchard and vineyard purposes. As yet, however, there are few trees or vines to be seen in this section. The slopes are mostly treeless, but the ravines are well timbered. Eucalyptus,

and other forest trees, have been found to succeed readily on any of these slopes, with a little care the first year.

Suñol Valley is a lake-like, circular depression, separated by high hills from the San Jose Valley to the west, and by low hills from the much similar region of the Vallecitos beyond. The soil in this neighborhood is a sandy loam of average fertility. The ranches are mostly somewhat large, ranging from four hundred acres to one thousand acres. Mr. E. M. Carr, in the Vallecitos, has a farm pleasantly situated on the rolling hills, and in the edge of the valley. He tells us that he is filling up the waste corners, and bits of hillside which are too steep to plow, with Eucalyptus for firewood. It is a good plan, which deserves a wide following.

East of Vallecitos the hills again cluster, and the road winds among them. They are broken ridges now, more naked, rocky, and barren than those we saw before. Then the broad, bright Livermore Valley flashes, as we climb a slope, into sudden revelation, the white walls and brown roofs of the town occupying the centre, with level fields, green and prosperous, folding it, and the blue circle of the everlasting hills keeping their empire of silence round about.

The Livermore people are planting a goodly number of trees this year, and more particularly of ornamentals. Our Washington Corners nurseryman, Mr. McKeany, has a depot in the town, and other nurserymen ship trees whenever ordered. Mr. Mendenhall has built a house of much architectural beauty, and laid out his grounds in the most ornate style. Mr. Horton, of windmill fame, is embowered in all the roses and shrubbery which could be mentioned. Mr. Fath showed us some orange trees which had survived the frost, and some pie-

plant which he was forcing by a covering of manure. He had Eucalyptus around his entire orchard, but found it so voracious a feeder that it injured the orchard trees and vines nearest, so he proposes to cut them down and plant some less rampant grower.

The young, smiling, brisk, and slippery *Tree Peddler* has been here—has indeed been everywhere! Who has not heard his placid step, his oily, mellifluous tones? Who has not seen his elegant book, so gorgeously bound, so full of sunset-dyed fruits, the like whereof never hung on mortal tree? Who has manfully, and through much tribulation, withstood his assaults, his entreaties, his specious arguments? To buy your trees of a tree peddler is to run an enormous risk—is, in fact, to entirely forego the privilege of ever obtaining redress, should the trees prove worthless. It is not to be denied but that some honest and good nurserymen send out agents, (who always have written authority), and it is quite possible that many honest persons are in the business. But the majority of traveling tree peddlers are frauds, and much delay the progress of tree planting, and the improvement of rural homes. For instance: Last winter, not ten miles from Stockton, a farmer paid a peddler two dollars and a half for a dozen of Kittatinny blackberries, sold by nurserymen at fifty cents. In Alameda County, not three miles from a nursery, resides a farmer who bought Alexander peach trees from one of these gentry, at the nice little figure of one dollar per tree, when they were selling elsewhere at twenty-five cents. In Livermore, the grafted roses which were sold at two dollars and a half apiece, either died or proved poor flowers. In several cases quinces and other trees were delivered instead of Japanese Persimmons. But

it is too long a story—this one of swindles perpetrated on that humbug-ridden class of people—the honest farmer, whom to gull is the delight of the average politician.

Altamont is the summit of the pass between the Livermore Valley and the San Joaquin. It is a desolate angle of the universe; bunches of grass are spotted over the white ridges; the ravines are black with mud; the prevailing smell is alkaline. Still, there are many small ranches hidden in the hills north and south.

"This kentry," said a long and loosely united native, "is jis like a singed cat, mor'n it looks, every time."

The west side of the San Joaquin, which we next cross, is one of those desolate and mournful regions where hopeless lives are passed. There is nothing whatever to be loved or desired in the ordinary seasons of this region. The winds sweep across it with a blinding intensity, the fierce suns harden it, the weary lack of sufficient rainfall ruins farmer after farmer. Once in eight or ten years a good crop comes, and the wide valley is a sea of grain. Then comes another time of failures. It will be so until the valley is irrigated from the sources of the San Joaquin. That is the only hope.

ARTICLES AND WRITERS.

We have often spoken of the value of short items and practical notes; we now desire to briefly consider the methods and object of those long articles which our friends have so generously sent us in the past, and which we hope to receive yet more abundantly. We believe in long articles, as well as in short ones, provided, always, that the author has a suitable, timely subject on which he is reasonably well posted, and that, having said his say, gracefully subsides.

If, however, we could whisper to the friends who are sitting down to write articles for dailies, weeklies, or monthlies, we should give them these general rules, useful in every department of literature, as well as in the narrow field of horticulture:

Having chosen your subject, consider it carefully in all its bearings, before touching pen to paper. This may sometimes be done while engaged in the ordinary occupations of the house or farm. A man may at the same time follow the plow and weave the threads of a story, or argument, or horticultural article.

Avoid a prelude, or preparatory blast. Push off into the current of thought as boldly as you can. Begin with something which attracts attention. Let your subject possess you, and you can not fail to be interesting.

Where there is a choice between two forms of expression use the simplest form. Do not be afraid of short sentences. Try, first of all, to be clearly understood. Use participles with caution. Study the province of that useful point, the semi-colon. Beware of an abundance of adjectives.

When the experiment is described, the thought expressed, the conclusion drawn, the argument finished, the story told, then it is time to put a final period.

The envied art of writing with force and simplicity comes only from much study, and many painful erasures. There are countless ways of expressing the same thought; how shall we choose the clearest? If we have found a truth, we wish to tell it plainly, so that all men shall understand. This is the only noble reason for writing at all. If we merely wish to astonish men, or desire a small notoriety, it is a pitiful business. The trouble with many young writers is

that they look upon literature as something removed from ordinary toils, and view authors, themselves included, as rather supernatural persons. Nothing could be more erroneous. To write is not, *per se*, any more creditable than to speak. Successful authorship is largely a question of hard work, patience, and enthusiasm. Literature, with those fitted by nature and training for its exactions, is at once an art and a trade. It has its annoyances, and its compensations. It is one, and only one, of the expressions of human activity.

LEAF FLAVORS.

It is not altogether an evil habit of children that they love to taste everything which looks enticing, or even endurable. They try the flavor of a fragment of bark, a growing twig, a swaying leaf, a brilliant flower, a waxen wild berry, an unknown seed or fruit. They taste whatever grows, with the same careless security common to self-sustaining young monkeys, and having little of the protecting instincts of the lower animals occasionally sample a little too heavily, and upset, for a time, the normal relations of the system, or nearly fall victims to their misapplied gastronomic experiments. Still, always since the beginning, always on to the end, children reach out their hands, anxious to taste whatever is high, or strange, and each leaf-cell holds for them a differing revelation.

The silent forces of the world, whose secrets are never to be fully told, involve our lives, and the lives of growing things, with sweet and fervid pulses, infinite, full of beauty, friendship, and encouragement; with strange glooms, and soft melancholies; with dim, wild, and swift poisons, chill and terrible. The leaf the little toddler, escaped from its mother's arms, gathers in heedless

security, may be life or death, pleasure or pain.

It is an old story told in some wierd romance of the deeds of Faery-land, and read in the glimmering twilight, yet glad with the sunset's tremulous gold, that enemies took the king's child to a place where each leaf, flower, and fruit was a poison, and there they left him. But, by some birthright, dimly understood, he lived and grew, thus fed, wise with a universal knowledge. And so he became king afterward. "There be some," the story said, "whom poisons do not harm, for out of ill things they make fair living, knowing nothing harmful."

Yes! we might dimly suggest a moral. It might be said that the garden of the world is full of strange leaf flavors, and love and terror grow side by side, and children taste of good and evil in more ways than from the narrow garden plot, where they sample each attainable leaf and fruit. It is a world of types, a universe of relationships. Not meaningless is anything children do, or any motion of wind or sea, or any glorious, snow-white mound of cloud, caverned through to the purity of heaven, or anything, anywhere, which may be seen, or felt, or heard, or breathed in through the gates of fragrance. The happy seed we place in the nursing arms of earth is a beautiful mystery, even after we have named its parts, and prophesied what it will do.

Wonderfully the brown earth treasures her children, feeding them fitly. Side by side, from the same soil, the nightshade and the grape draw their juices; each wisely, each for its own use, but not alike for the use of men. After all is said, there are many things which were not meant for us. That is a thought of joy, not of sorrow, because it gives us a sense of infinity.

Editorial Notes.

ROSES FOR HEDGES.—In the extensive grounds of the State Insane Asylum in Stockton, we saw some fine effects produced by various hedge plants. One of those hedges was formed of perpetual roses trimmed close to a height of two feet, and being now full of leaves, buds, and blossoms in a perfect mass, is an entire success as a hedge. We should suggest that the alternating of red and white roses, or the mingling of red, white and yellow, or the planting of opposite sides of a walk with different colors, would give a pleasing variety. The use of choice roses trimmed closely, and following the curves of a carriage-way, is always pleasing, and, if a hedge for a few months rather naked and blossomless, is not objected to, there can be no better choice than this. Roses, it may be parenthetically stated, are about the most satisfactory plants for a school yard, or around any public edifice, for they grow easily, endure neglect, and are showy most of the year.

A DWARF CYPRESS.—We lately observed, at the nurseries of Mr. West, Stockton, the most unique little tree imaginable. It is an accidental seedling from *Cupressus Macrocarpa*, and a more compact, globular, neat-leaved dwarf conifer we never saw. We have forgotten exactly the number of years which have passed over its head, and we fail to remember the exact number of inches it boasts—few enough certainly—but we are quite sure that it is worth propagating, and sending out as a good dwarf of California parentage.

Mr. West has absolutely the best collection of conifers growing in his grounds which we have yet seen anywhere. Our native species are well managed, and treasured with the affection of a man who knows their value. It makes us perfectly and completely happy to meet a man who knows that a handsome species of pine which grows on the slopes of the Sierras is *per se* as well worth planting as is a European or African species, and is probably much better adapted to our climate. There is no abiding virtue in distance; a tree from the antipodes is not therefore, or merely by force of foreign origin, worth the planting, or worthy of the affections of men.

THE STOCKTON INSECTICIDE.—Mr. G. N. Milco, of Stockton, has for some years past been investigating the properties of *Pyrethrum Carneum*, a plant largely used in Dalmatia for the manufacture of various insect preparations. Believing that there was room for the business, he introduced the plant some years ago, and, after many trials, and not a few tribulations, has, beyond a doubt, put his article on a sound financial basis. The preparation, which is made from the flowers, is called by a Dalmatian name, "Buhach" (pronounced Boohatch), and this title has been patented by Mr. Milco as a trade mark. The quality of this insecticide, made from

fresh flowers, appears to be superior to any now in market from foreign sources. Professor Hilgard has brought various comparative tests to bear upon it, and gives it his indorsement. We are, in this State, becoming so overrun with insect tormentors, destructive alike to vegetation and to peace of mind, that we hope much from the *P. carneum*, provided always that the preparation is carefully made, and fresh, which we believe to be the case with Mr. Milco's Buhach.

KEITH'S LAST PICTURE.—There is a studio, in the heart of the toiling city, where glimpses of the deep woods, the flowing streams, the mountain peaks, and the fleecy clouds of spring, lie always, not imprisoned, but as it were of their own free will. Who does not know Keith; and who has not felt the rare faithfulness of his work? This is our own California which he paints; here is his last love, blue Tamalpais under an April sun, and if you can not see the grass grow, or hear the lowing kine, it is your own fault and not the painter's.

CALIFORNIA GROWN COTTON.—Mr. Horton, of Livermore, has recently given us a handful of uncleaned cotton raised by himself in his garden a couple of seasons ago. It is called, by a number who have examined it, a fine sample of upland cotton. This experiment should encourage others to follow in the same path. Much will yet be done with cotton in this State. Some sections will be found poorly adapted to its culture, but in others it will be an entire success.

BLUE GUMS IN SAN JOAQUIN COUNTY.—The Eucalyptus is beginning to be largely planted in this county, along roadsides, and in the form of groves. In gardens and city lots it is not here, any more than elsewhere, a satisfactory tree. We have also noticed that the trees were greatly affected by the frosts of last winter, in some cases hardly recovering.

Mr. Charles W. Yolland, an old schoolmate of ours, has the largest grove of Blue Gums to be found between Stockton and Woodbridge, and a sadder appearance than these presented in last March could hardly be imagined, but they began to grow again with the advent of warm weather. This grove, planted by Mr. Yolland's father, is a famous shelter for a large and healthy lot of chickens. A field of alfalfa, and a field of early potatoes and vegetables, are adjoining; the pasture lands, where mottled Jerseys and slim Ayrshires roam, is near by. Altogether, it is a pleasant country home.

EVAPORATION BY LEAVES.—According to the *Popular Science Monthly*, Prof. Boussingault, of Paris, shows that the amount of water evaporated by leaves is so great that a square metre of grape foliage transpires hourly, thirty-five grammes in sunshine, eleven in the shade; an acre of beets loses, in twenty-four hours, from eight to nine thousand kilogrammes of aqueous vapor. This seems to estab-

lish clearly the relation of forest growth to atmospheric humidity, and consequently to rain fall.

ORCHARD FRUITS IN JAPAN.—We had the pleasure recently of a visit from Mr. Drake, of Yokohama, who is a friend to horticulture, and from whom we quote several interesting facts with regard to Japanese plants. He tells us that the introduction of our common orchard fruits into Japan is almost impossible; peach and plum, apples and cherry, flower beautifully, and grow lustily, but bear no fruit. The favorite method of training orchard trees is to bend the branches down over a trellis, making a sort of arbor of each one, and keeping them within reach of the hand.

TURNING PLANTS OUT OF POTS.—There is probably no operation in gardening that yields more pleasure than the one to which Mr. Howatt refers, and none requiring less skill. It has also this advantage in our climate, viz: it may be done at any time of the year. If some of our plants fail, and there are bare spots in our flower beds, we can fill them at any time. The plants being well established in the pots do not feel the removal, and are not checked in their growth. For the sake of beginners we give directions how to turn a plant from a pot. First prepare a hole in your bed a little larger than the pot containing the plant. Then take the pot in your right hand, lay the left hand over the top of the pot, putting two fingers each side of the stem and spreading them apart so that they will support the ball of dirt when it is loosened. Now invert the pot and tap the edge of it on something. The ball of dirt will loosen from the pot and rest upon your left hand. All you have to do now is to place this in the hole prepared for it, and press the dirt gently but firmly about it. Of course you will be careful that none of the dry surface dirt falls into the hole you have prepared. Experienced horticulturists will smile at these very simple directions, but we have seen the time when they would have been useful to us.

GREENHOUSE NOVELTIES.—We found the following at the Exotic Nurseries in this city:

Anthericum variegatum, a first class novelty from the Cape of Good Hope, perfectly hardy in any locality, and equally desirable for house culture. Foliage bright glossy green, beautifully striped and margined with white; leaves grass-like, gracefully recurved, representing very much the well known *Pandanus Veitchii*.

Coleus pictus, a very distinct *Coleus*, of a new strain. Ground color of the leaves is light green, fleshed and marked with yellow and chocolate brown; size of leaves extra large and undulated. This will prove a bedder for this climate, inasmuch as its strong and robust habit, and the great substance in the foliage, will bear with both the sun and the wind.

Coleus multicolor, a most remarkable new type of *Coleus* from the Solomon Islands, very distinct on account of its many colors. The leaves have a bronzy ground, finely blended with red, yellow, rose, and crimson. Habit compact and robust. Will also prove to be a good bedder for this climate.

Geranium New Life, a novelty which will become very popular. Ground color, deep scarlet, striped and blotched with white, something in the style of Carnations. Plants in bloom at our nurseries now are admired by everyone. It is certainly a very striking and most welcome novelty.

Eulalia Japonica zebrina, of which Mr. Peter Henderson says this: "Unlike everything else, the striping or marking is across the leaf instead of longitudinally. It grows from four to six feet in height, forming a most striking and graceful plant, resembling nothing else that we know of in cultivation." The habit of this plant is similar to Pampas Grass, and we can recommend it strongly as a first class ornamental plant for the open ground.

Teucreum frutescens, a very promising novelty in the line of hardy evergreen flowering shrubs; and will also do well under glass. Foliage milky white, flower is the style of the Canary Creeper, only smaller, of a lavender blue color. Nearly always in bloom; grows five to six feet high, and forms a most charming object on account of its white leaves and delicate blue flowers. Somewhat difficult to strike from cuttings, but easily grown after being once established.

Colletia frutescens, a remarkable curiosity in vegetable life; a thorny evergreen shrub, growing from six to eight feet high; the leaves resemble enlarged thorns, and increase in size as the plant grows larger and stronger. When in bloom, the whole plant is enveloped in tufts of white flowers, which are very sweet-scented and remain in bloom for a long time.

Fuchsia aurora superba, a new and striking novelty in the style of Prince of Wales. Petals and tube salmon color; corolla large bright orange scarlet, suffused with yellow. Strong grower and abundant bloomer.

New Succulents.—*Haworthia atrovirens*, *Haworthia Reinwardti*, *Aloe curpidata*, *Aloe imbricata*, *Aloe deltoidea*, *Aloe albicans*, *Crassula rosularis*.

THE last number of the "Bulletin Torrey Bot. Club" notes the rediscovery, in East Australia, of "the smallest Orchid known," *Bobbophyllum moniliforme*, after being lost sight of for more than twenty years. The leaves of this "pigny orchid" are one-eighth or one-sixth of an inch in diameter, and might readily be taken for one of the *Hepaticæ*. The small red flowers measure only one-sixth of an inch.—LORENZO G. YATES.

ABIES MENZIESII.—We observe a fine specimen of this stately tree on the grounds of Mr. A. D. Pryal, near Temescal. It is sixteen years old, and about twenty feet high, of a handsome, symmetrical form.

Mr. Pryal has been propagating it by cuttings taken from the leaders of the branches, and struck in sand, in a cold frame, where they must remain from three to six months before becoming well rooted. Be sure to use the *leaders* for cuttings as this insures a more even, well-shaped head to the young tree. This is one of our most desirable conifers, and we hope to see it planted more extensively.

MIXED UP ROSES.—A friend of ours once bought a "Pauline" rose from a nurseryman—at least it was so labeled. Result, a rose of a light pink color. Two years later he bought, from the same nurseryman, another "Pauline." Result, a rose of a deep crimson color. Moral to nurserymen—Don't mix your labels.

MAHONIA AQUIFOLIUM.—This evergreen shrub, a native of the Oregon woods, is used, with fine effect, on the lake margin in Woodward's Gardens, and elsewhere. It has, for some months past, been in bloom, and the large masses of yellow flowers and buds contrast well with the dark, compound leaves.

STOCK FOR ROSES.—We have elsewhere spoken of some new stocks, and disapproved of the common one, called here the Castilian; but it is only fair to add that some of our most beautiful roses do better on other roots than their own. Although the so-called Castilian has the unpleasant habit of sending up an army of suckers, still much may be done by judicious work in the nursery, and the thriftiness and hardness of this stock may render its use pardonable, despite its tendencies to sucker.

PEONIA BROWNII.—Mrs. C. P. Bingham, of Santa Barbara, sends us a specimen of this plant, and writes us one of those pleasant, chatty letters which are a delight to receive. *P. Brownii* has a tuberous root, like the cultivated varieties, and its growth is similar. The flowers are purplish-red, velvety, and the leaves are beautifully shaded and tipped with brown. The plant is very common in the southern counties.

Pomological Notes.

THWACK RASPBERRY.—Hussman, of Miss., says the Thwack Raspberry is excellent for shipping, but not so good for home use as some others.

We have seen it stated that by picking off fruit the bearing year and letting the tree rest, it will produce the next year. Thus you may have fruit when it is scarce.

It is said that some western nurserymen are experimenting upon grafting the pear on apple stock.

THE DEWBERRY.—Gen. Noble, of Bridgeport, Conn., asks in the *Gardener's Monthly* why it is that

no more attention is paid to the dewberry. He speaks of the delicious dewberries, or trailing blackberries, of Virginia, some of which he says were an inch and a half long.

THE AUGHINBAUGH BLACKBERRY.—We have eaten very fine ones in Illinois and other parts of the Union. The Aughinbaugh Blackberry is doubtless a dewberry, as it is of a trailing habit, but it seems to be a very poor bearer. Is not the dewberry of the East worth introducing into California?

DRYING RASPBERRIES.—A correspondent of the New York *Tribune* says there is no kind of dried fruit in such brisk demand in market as raspberries, and that it is quite as profitable to dry as to sell fresh. One hundred quarts will make thirty pounds, which at thirty cents per pound, gives nine cents per quart for the fresh fruit, less half a cent, the cost of drying. The Black Cap is here alluded to, which he states is the most hardy, reliable, and easily grown of small fruits.

In the *Rural New Yorker* we find a plate and description of a new quince, the Champion. This variety originated on the grounds of Mr. George Perry, Fairfield, Conn. It is of large size, and much the shape of a Duchesse pear. Its chief merit seems to be that it comes into bearing very early and is very prolific.

PHYLLOXERA.—We see in the American *Farmer* that the international committee appointed at the Trocadero Congress report on this subject as follows: "The only efficacious insecticide is sulphuret of carbon as first employed by Baron Thenard, but abandoned owing to its severe effects. The manner of employing this remedy is now better understood; two injection holes per square yard suffice to inundate the soil to the depth of eleven inches with the poisonous vapors, and some apply the quantity in three doses, at intervals of four, six, and ten days. Submerging the vines drowns the bugs, but the flooding ought only to take place in autumn after all vegetation has ceased. Then the vines can support eleven inches of water, from thirty to fifty days, to be followed in spring by liberal manuring. The plant, when attacked at the roots, dies from inanition, hence any insect destroyer must be succeeded by a good manuring to give strength to the wounded plant; after barn-yard manure, the next best fertilizer is dried blood, with sulphates of potash and iron and super-phosphates."

PERSIMMONS.—The Florida *Dispatch*, speaking of the native persimmon, says: This fruit will be appreciated this season where the apples have been a failure, and if good varieties should be gathered carefully and laid on shelves in a cellar they will keep good for months. It will be well, however, to know whether it be a good variety before storing

away, as some are so utterly worthless as not to be worth gathering, while a good one is really delicious. Many persons suppose that a persimmon is a persimmon, and that all are alike. This is a great mistake, for there are various grades. The three essential qualities in a persimmon are, good size, good quality, and few seeds; of course the productiveness of the tree should be also taken into account.

INJURED BY FROST.—From the *Prairie Farmer*, Illinois, we learn that fruit trees are very much damaged in Illinois. One writer says that peach trees are killed to the snow line, and all other fruit trees much injured. In Kansas also they think the buds are killed.

STRAWBERRY VINES.—We have seen strawberry vines entirely destroyed by worms. The worms work in the crown of the vine and destroy all the buds. It is said that by spreading a light covering of straw over the vines and burning it off the worms will be destroyed, and the plants not injured. It seems a little dangerous, but when we remember that if we do nothing our plants will be destroyed by the worms, it may be worth trying.

GOPHERS.—It is not inappropriate to put this item with fruit notes, as any one who has had his choice trees destroyed by the little villains will understand. A gentleman in San Bernardino has been very successful, it is said, in poisoning gophers, which rodents are, as a general thing, very hard to kill by poison. He takes raisins, opens the skin sufficiently to admit of a grain of strychnine, and then drops one or two in each hole. The gophers are said to be very fond of them. If green apples are used, it will also be found that the gophers will not refuse them. Almonds as soon as the kernel forms or when dry are good. Cut off a piece of the shell at one side and insert the poison in the kernel, then drop the almond in the hole. It must be remembered, however, that no method is good unless persistently followed. Eternal vigilance is the thing needed.

THERE is much to be learned in regard to the methods by which destructive insects are to be kept in check. One of the most satisfactory of these methods is that of finding some other insect that preys upon the pest. It seems they have found an assistant of this kind in Florida, who makes it his business to devour the scale insect which is so troublesome on the orange tree. Mr. T. W. Moore, in his work on the orange, describes it as a species of lady bug, with a single red spot on each wing case. So useful an insect should be encouraged.

THE OLIVE.—The olive tree once planted suffices for generations. The age of some of these trees pass beyond the limits of tradition. In Italy is an orchard known to be seven hundred years old. One tree near

Nice measured thirty-eight feet in circumference at the bottom of its trunk, and in 1516 was one of the oldest trees in the neighborhood. In some parts of Spain and Italy, little is cultivated but the olive, and it affords sustenance to millions of people. In view of the many advantages derived from the culture of the olive tree, and the small expense attending it, every man and woman in California who owns a lot ever so small, should plant a few by way of experiment, and where successfully grown, they will prove a life-long blessing.—**FLORA M. KIMBALL**, in *California Patron*.

We had prepared for the April number of this journal, a notice of the meeting of the Fair held at Riverside, by the Southern California Horticultural Society, as reported in the Southern California *Horticulturist*. This notice was, however, crowded out, and the report there made has been the subject of so much discussion in the weekly and daily papers that it would not be new to our readers. We, therefore, give to our readers only a few general statements:

1st. On the subject of seedlings or grafted oranges and lemons. The sense of the meeting seemed to be, that seedlings were better able to resist frost and disease, would produce more fruit, and were often fully equal to the best grafted, but if one would be sure of the variety, they must bud or graft. Seedlings were spoken of as bearing in six to eight years.

2nd. In regard to stock for grafting the orange upon, the committee decided from the specimens presented, that oranges on lemon, lime, or citron stock, were not so sweet, or of so good quality, as on orange. We have since seen it stated that the oranges presented were not ripe, and that therefore this test was not fair.

3d. In regard to irrigation, opinions varied. One gentleman saying that all the water you could obtain was none too much; and another, that he did not irrigate at all, and considered irrigation to be the cause of disease, and found good cultivation to be all that was needed. Of other tropical and semi-tropical fruit besides oranges, there were exhibited limes, lemons, citrons, figs, guavas, date palms (not ripe), bananas, and olives. There are to be further reports upon the comparative advantages of seedling and grafted oranges.

TWO OF THE NEW STRAWBERRIES.—Messrs. Silva & Sons, Newcastle, Placer County, write as follows: "We have considerable faith in the Sharpless Seedling, more than we have in most new kinds, in fact. But then 'sometimes you can't most always tell,' especially in new strawberries. We thought Great American was the 'boss,' but it does not quite fill the bill."

THINNING FRUIT.—The peaches, pears, and apples need thinning at once, in all probability. Good, large, marketable fruit can not be expected otherwise. It is rather a tedious piece of work, but there is nothing difficult about it. Begin to thin off the

fruit when it is about as large as a marble. People who are unused to orchard work seldom know how much to pick off. It is, in most seasons, hard to thin too much, and too many are usually left on. Of course this does not apply to a young tree which is just beginning to bear, but to a large tree in its prime. The tendency is, with such a tree, to produce so much that the limbs, unless propped up, break. Now, it is an act of folly for a man to prop up a tree, with the expectation of finding the increased crop profitable. The fruit will all be small, and the extra weight will not nearly compensate for the loss in quality. The sensible thing to do is to pick off fully two-thirds of the fruit on such a tree, leaving the remainder scattered evenly over the tree. Thinning must be systematically practiced, as a part of the regular orchard work, if fine, or even passable, fruit is desired.

SOME FRUITS OF DOUBTFUL HARDINESS.—A correspondent, writing from Walla Walla, Washington Territory, asks whether the Coffee, Orange, Citron, Guava, and Japanese Persimmon will succeed there. There is no hope whatever for the Guava, Coffee and Citron. Each and all will refuse to live outdoors. Seedling Oranges, or a Japan dwarf, which is hardier than most others, will do well enough to experiment. We have to keep Guavas under glass all winter even here, or the frost kills the tops, and ruins that season's crop. The Japanese Persimmon will, we are informed by such good authority as Mr. J. J. Jarman, succeed in even places where snow falls.

THE PETITE PRUNE D'AGEN.—This valuable plum, at first largely planted, and then somewhat neglected, is again taking a high place in popular favor. Mr. West tells us that it is undoubtedly the plum used in France for making the dried prune of commerce, and no other prune seems so well adapted to the warm interior valleys. In some localities near the coast, this plum cracks badly, but, in most cases, it grows well, and is a heavy bearer.

New & Desirable Plants.

[We shall glean from our exchanges and correspondence, notes on plants either new, or of promise in our climate. Our nurserymen are invited to send notes on any interesting plants received.]

The *American Agriculturist* for March figures a new Clematis. This Clematis is scarlet, and is a native of Texas. The name does not seem to be well settled, as it is called both *C. coccinea* and *C. Texensis*. It does not seem to be in market yet, but we should suppose it would be desirable, and coming from such a dry country like Texas would suit well here. There are many beautiful wild flowers in Texas. The trailing Mimosa, with its globe-shaped blossoms—pink, white, or straw color—is very beautiful. The Evening Primrose (*enothera*), some white,

some pink, and some yellow, were very fine. The Aconite or monk's hood, with its curious lavender-colored flowers, also grows wild there. A variety of *Salvia*, we think *Salvia fulgens*, known there as Indian plume, deserves its name by its long plumes of intensely bright scarlet flowers. The Atamasco Lily, a species of *Amaryllis*, stars the open prairies with its white blossoms. Along the streams the *Æsculus Pavia* (red Buckeye), a small tree or rather shrub, is very lovely when in bloom. In the ponds is found a species of *Nymphæa*, which bears an edible nut; and on the dry gravelly knolls, where nothing else will grow, nature displays rich treasures of flowers on the ungainly and thorny Cactus. We have named but a few of the floral treasures of Texas, but it is a country rich with flowers.

FRITILLARIA KARELINI.—Among new plants the London *Garden* places *Fritillaria Karelini*. It is a native of Central Asia. This variety of *Fritillaria* has white flowers suffused with pink and spotted with red. It must be very much more showy than our California variety. The *Fritillaria Karelini* flowers in winter in England. Ours were in bloom the last of February. The *Garden* states that F. Karelini was known forty years ago, but appears to have been lost.

NEW FUCHSIA.—We see in an English catalogue a plate of a new Fuchsia called *Erecta Von Novelty*. The peculiarity of this variety is that the flowers all stand erect instead of drooping. We are not at all sure that it is an improvement.

FLOWERS FOR FEED.—No flowers in this part of the world are considered valuable as food. We might except, perhaps, the delicate confection which the French make by sugaring the petals of fragrant violets. We have heard of these being used as a dessert, but such airy fare, alone, would soon bring a man to starvation. In many parts of India, however, the flowers of a tree called *Bassia latifolia* form a really important article of food. These blossoms, which are succulent and very numerous, fall at night in large quantities and are gathered early in the morning and eaten raw. They have a sweet but sickly taste and smell. They are also dried and stored as a staple article of food. A single tree will afford from two to four hundred pounds of flowers. These trees are of so much importance to the native, that when an invading force threatens to cut them down the threat generally insures the submission of the tribes. The blossoms of another species—*Bassia longifolia*—are used in a similar manner in Malabar and Coromandel. These are eaten either dried or roasted, or bruised to a jelly and boiled. The last are made into small balls, which are sold or exchanged for fish, rice, and various sorts of small grain. The seeds of varieties of *Bassia* are no less useful than the flowers. Oil and soap are made from some, and from others a fatty substance called

butter is extracted. This is of a white color; has an agreeable taste and keeps well. It is an important article of commerce in Sierra Leone.—*The Aquarium.*

TIGRIDIA PAVONIA GRANDIFLORA.—The London *Garden*, of February 15th, has a gorgeous plate of the *Tigridia Pavonia Grandiflora*. It is a vivid scarlet, and at the centre of the flower is spotted with darker scarlet on a yellow ground. The petals measure over four inches. We learn from the article in the *Garden*, that the order *Tigridia* consists of six species of *T. Pavonia* with its numerous forms: *T. conchiflora*, or Shell Tiger flower; *T. atrata* with greenish flowers penciled with dark-colored spots like a *Fritillaria*; *T. curvata* and *T. violacea* with purplish blossoms; *T. lutea* with yellowish blossoms; and *T. Van Houttei* spotted with purple. These plants are most of them natives of Mexico. *T. lutea* is a native of Chile and Peru. We have often thought that the *Tigridia* would have to take the place of the tulip in California. It suits our climate, while the tulip does not. Would it not be possible, by crossing the different varieties, to produce a great variety? We have raised them from seed with good success.

A GIGANTIC PLANT.—Dr. Beccari has discovered in Sumatra a gigantic aroid, probably a *conophallus*. The tuber of one plant was 1.40 metres (five feet, in circumference, and two men were hardly able to carry it. From the tuber only one leaf is produced. The stalk at the base in one instance was 90 centimetres in girth, and reached the height of 3.5 metres; the leaf smooth, green, with small, white dots. The three branches into which it was divided at the top were each as large as a man's thigh, and were divided several times, forming altogether a frond not less than 3.1 metres long, (45 feet in circumference). The fruit-bearing portion was densely covered with olive-shaped fruit of a bright red color; the spadix is six feet long.—*Popular Science Monthly.*

[This plant we notice because it is certainly very "new"—as to its being "desirable," we are not so sure.]

NOVELTIES IN PLANTS.—Parson & Sons Co.'s catalogue contains, among other novelties, the following:

Betula alba purpurea. (Purple White Birch).—Foliage of a beautiful purple color, as dark as that of the Purple Beech, contrasting beautifully with the silvery bark.

Betula syringaefolia aurea.—Leaves large, entirely suffused with a permanent golden color, giving a beautiful warm tint to the foliage; a remarkably handsome tree, with noble foliage of peculiar character and long clusters of fragrant, white variegated flowers in August.

Quercus pannonica concordia.—Large bold leaves, entirely suffused with a bright golden color, which deepens as the season advances.

Cerasus japonica pendula.—The favorite weeping

tree of Japan. The branches fall regularly and in graceful curves. Especially beautiful when in flower.

Daphne Genkwa.—A beautiful, slender, upright growing shrub, with numerous long, downy twigs, which in early spring, before the leaves appear, are thickly garnished with tubular violet-colored flowers, more than an inch long. Seldom more than three feet high; fine delicate foliage. Among the best of flowering shrubs.

Magnolia Halleana (stellata?)—The most elegant of *Magnolias*, very distinct and individual in its character, and blooming very young. It forms a round, symmetrical, middle-sized bush, which is covered in early spring, before any other *Magnolia*, and before its leaves appear, with exquisite semi-double flowers. These flowers resemble the water lily in the translucent whiteness of their many narrow petals, and surpass all others in delicate, subtle odor. Leaves oval, medium-sized, rich green, appearing late.

Wistaria japonica.—Very rapid growing climber; purplish-blue flowers, on racemes two feet long.—*Gardner's Monthly.*

WISTARIA JAPONICA.—Besides the purplish-blue variety, spoken of in Parson's catalogue, we notice pink, and white, now growing in California. The racemes did not attain a length of much more than a foot, but they had not had time to fully recover from their journey from Japan. The fragrance is delicious, and attracts insects to an annoying extent.

THE CALIFORNIAN ARISTOLOCHIACEÆ.—We have at least two varieties of *Aristolochiaceæ*. One, an *Asarum*, is found in the foothills of Alameda County, and is a creeping plant from a root stalk; the other is a trailing vine (an *Aristolochia*) from the northern counties. The best specimen of the creeping variety we have seen was found in a wet place under tag-alders, beside a creek in the Berkeley hills; it sent up a great number of large, conspicuous leaves, smooth, and clear green, looking somewhat like giant violet leaves; the flower was small, of a dull reddish color, and rather peculiar shape, each of the three petals ending in a long thread-like point, half an inch long, which gives the flower an uncanny spider-like look. These points are the chief difference between our *Asarum*, and the *Asarum Virginicum* ("Wild Ginger" or "Snakeroot"). The specimen of the *Aristolochia* proper which we have seen was dug from a rich, dark place in the woods of Shasta County; it declines to twine much in its present situation (a too sunny one), but hangs upon its strings, and sends out tremendously vigorous trailers into all the dark corners it can reach. The exposed portion of the vine bloomed abundantly on the bare stems, about the middle of February this spring, and remained in bloom for more than a month. There seems to be little difference between this vine and the well known *Aristolochia Siphon* of the East, except that ours has decidedly downy leaves.

Reviews and Exchanges.

[All books on subjects in any way connected with horticulture will be reviewed in this department. Publishers are requested to state the price of each book sent.]

We have received Parts XVII, XVIII, XIX, XX, Vol. 2, of Meehan's "Native Flowers and Ferns of the United States." We have spoken of this before, but it is so charming a work that we can not forbear speaking again. The beautiful colored plates give so perfect a representation of the flowers that all old acquaintances are recognized at a glance. Here are the flowers we loved in our childhood in their own fair forms and colors; and here too are many lovely strangers. The descriptions accompanying are very copious, giving not only the scientific description, but the habitat, the history, and often the poetry of the plant. It is a most valuable work. For sale by H. Keller & Co., 116 Post Street, San Francisco.

A POPULAR CALIFORNIA FLORA, or Manual of Botany for Beginners, containing descriptions of exogenous plants growing in central California, and westward to the ocean. By Volney Rattan, teacher of Natural Sciences in the Girls' High School, San Francisco. Publishers, Bancroft & Co., San Francisco. Price one dollar.

We are glad to welcome this book to our desk and library, where it shall hereafter rest as a handy volume of reference, and a pleasant memento of the genial author. It contains brief descriptions of over five hundred species of plants known to grow in the region bounded on the west by the coast line from Monterey Bay to Mendocino County, and on the east by the foothills of the Sierra Nevada. Only the Polypetalous and the Gamopetalous exogens are described, and of these Umbelliferae and Compositae are omitted, as too difficult for beginners. A second part devoted to the Apetalae and Exogenous plants, with also an introduction to Systematic Botany, will probably be issued within the year.

Mr. Rattan appreciates the fact that botany in our public schools has often been but poorly taught by using merely the plates and descriptions of plants which are not found here. Indeed, it could not be otherwise, since the knowledge of our own beautiful and diversified flora was locked up in expensive reports, scientific publications, and European journals. A simple, descriptive text-book, such as this under consideration, will answer the numberless botanical questions which teachers, flower-lovers, and young students have been asking almost vainly, lo! these many years. This little book does not claim to be complete, but it gives, with rare good taste and judgment, the points of practical usefulness to the class it addresses. Some, led by its careful pages, will, we hope, buy the large work on California Botany which is published in uniformity with the Geological Survey Reports.

We understand that this condensed California Flora has been adopted as a text-book in several private schools, and is on the State list of books for the School Library, so that any teacher may have it bought as a work of reference for the older pupils. If we can persuade the girls and boys, now that the way is clear, to begin in a natural and interesting way, that wonderful outdoor study of plants and plant life, which we name Botany, we shall feel that this monthly is its own excuse for being. At this season, and indeed until the hot days of August, our mountain slopes and breezy woods, and deep ravines, are overflowing with rare bloom and brightness. Where are the boys who will take their tin plant cases, and this little book, and so, gunless and rodless, search in all the dim places of the reverential mountains?

From Quebec we have *Le Journal D'Agriculture*, publié par le Département de l'Agriculture de la Province de Québec. Coming from such a cold climate as Canada, there is of course very much in this journal that is not suited to California, but we most heartily indorse one thing they say, viz: "We attach a very great importance to the department of correspondence in this journal, and we anew beseech our readers to give us the results of their experience, in all that which may be interesting to cultivators." This is just what we wish to ask of the readers of the CALIFORNIA HORTICULTURIST.

The *Scientific Press Supplement*, of this city, is full of most interesting matter. We are surprised by the statement that there are thirty flour mills, having an average capacity of six hundred tons per annum, in the immediate vicinity of the town of Hermosillo, Mexico. It must be a good agricultural region that supplies wheat for so many mills.

The Canadian *Horticulturist*, St. Catherines, Ontario, is published by the Fruit Growers' Association of Ontario. The semi-annual meetings of the Association are reported in full, and show that the Ontario horticulturists are in earnest.

The *Western Horticulturist* has a wood cut representing a hanging basket composed entirely of ferns and smilax. The basket is to be filled almost entirely with moss, a little earth in the centre, and a sponge or small dish in the bottom. The ferns recommended for this purpose are Maidenhair, *Athyrium*, *Polypodium vulgare*, *Asplenium flaccideum*, and *Pteris serrulata*.

In the *Gardener's Monthly* there is also a very pretty device for ferns. It is a hollow column having holes at the side. In each of these holes is placed a large shell; the centre of the column and the shells are filled with dirt, and the ferns planted in the shells. For convenience in planting the column is made in segments. It may be made either

of terra-cotta or wood. The upper section has an ornamental finish and on it stands a vase or pot of ferns. This column may stand on a slab or oil cloth and thus the carpet be preserved from damage.

Vick's Illustrated Monthly, Rochester, N. Y., gives a colored plate of several new geraniums, among them the striped scarlet and white "New Life," so widely discussed in floral journals at present. If it turns out to be a permanent and thrifty variety it will be a valuable acquisition. A note on *Abronia* makes us wish that these charming and fragrant "beach-verbenas" were as well appreciated and carefully cultivated here in their homes as in New York; we can say the same of the *Nemophila*.

The London *Garden* gives us a plate of several interesting new varieties of spotted *Gloxinias*.

Park's *Floral Magazine* for February gives a wood cut of an old favorite of ours, the *Schizanthus*. We think it very valuable for cut flowers, giving a light, airy look to a vase of flowers.

We have received several numbers of *The Aquarium*, published in Cincinnati. It is mainly devoted to aquariums and the plants and animals that are suitable for them. This is a new monthly, and so far is full of useful information. In another part of our magazine we copy an article from this paper, and have one, on the management of aquariums, marked for future use.

The *American Garden*, published at New York, has some very sensible remarks in regard to watering pot plants. He says that it is impossible to give an exact rule. He quotes Mr. Van Houtte as recommending that a certain plant have plenty of air, an *intelligent* watering, adding that the nearest approach to a golden rule is this: Let the amount of water be in proportion to the vigor of the plant. When growing rapidly it needs more water, when slowly, less. We find the *American Garden* an interesting quarterly.

TWO EXHIBITIONS IN 1879.—The International Exhibition at Melbourne, opens October 1st, 1879. Applications for space should be made not later than June 30th, 1879, and, if by Americans, must be made through the Vice-Consul General, Samuel Perkins Lord. A notice of the programme received will be found elsewhere. Mexico, also, is proposing to have an Industrial International Exhibition this year, subject, we understand, to the approval of her Congress. Mexico is in the right path when she turns her thoughts to agriculture and the industrial arts.

The *Prairie Farmer* advises the planting of heavy evergreen wind-breaks to shelter stock from cold winds—advice not so much needed here as on the prairies, but not entirely without its wisdom for some parts of our State.

Catalogues, etc., Received.

[We shall acknowledge the receipt of all Seed or Plant Catalogues, Pamphlets, Reports of Horticultural Societies, Agricultural Reports and similar documents.]

Hoopes Brothers & Thomas, West Chester, Pa. These well known nurserymen offer a general assortment of trees, shrubs and plants.

Speech of Hon. A. S. Paddock of Nebraska, in the Senate of the United States, upon Agriculture. This speech is devoted to a discussion of what the Government can do to promote agriculture. We may take up some of the points discussed at some future time.

F. F. Mercheron, Catawissa, Pa., sends a circular on the Sharpless strawberry. It is accompanied by a colored plate of the fruit.

John Saul's catalogue of new, rare, and beautiful plants for the spring of 1879. Washington City, D. C. This is an old established and reliable house. We see they offer a number of new coleus, and a large variety of desirable plants.

Price List of Native Perennial Plants. Edward Gillet, Collector of Native Plants, Southwick, Hampden County, Mass.

Commercial Nurseries. William S. Little, Rochester, N. Y. Trade Circular.

Park's Illustrated Catalogue for 1879. Mt. Vernon, Ohio. Catalogue of flower and vegetable seeds.

Purdy's Descriptive and Retail Catalogue. Palmyra, N. Y. Seems to be mainly devoted to small fruits of which the list is very full.

E. P. Roe's Catalogue for 1879 is, as always, a readable one. It is good in the line of small fruits. Mr. Roe thinks the "coming strawberries are Crescent Seedling, Forest Rose, and Sharpless." His address is Cornwall-on-the-Hudson, N. Y.

Germantown Nurseries, Philadelphia. Thomas Meehan, proprietor. Mr. Meehan is very strong upon Oaks, and we believe very much in favor of this tree for planting. For ourselves we have great respect for his judgment. He sends out also a seed catalogue which grows longer each year. Having dealt with Mr. Meehan, we know of what we speak, when we say that he is both fair and reliable.

Steele Brothers' Small Fruit Price List. Laporte, Indiana.

Beach & Sons. Seeds, Bulbs and Plants. 7 Barclay Street, New York. This is a very rich catalogue. The study of it would be likely to result in an investment.

W. A. Watson. Normal, Illinois. Fruit trees and ornamental trees and shrubs. We see they talk about trees by the 100,000.

The *Literary News*. A monthly journal of current literature. Published by A. Roman & Co., 11 Montgomery Street, San Francisco. This little pamphlet contains much very interesting information about recent publications.

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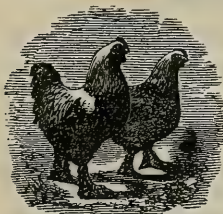
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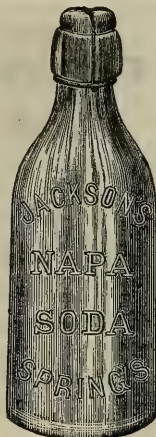
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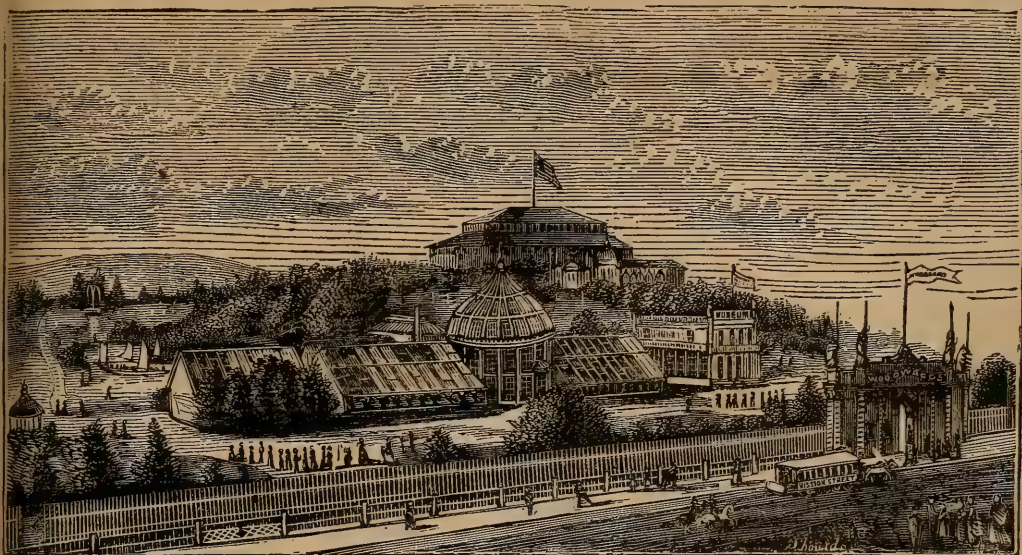
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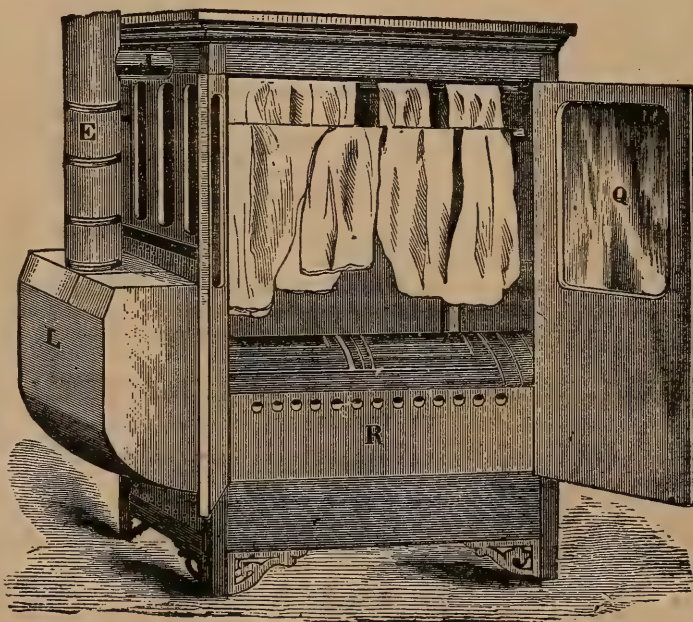
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Vol. IX.

JUNE, 1879.

No. 6.

THE

California Horticulturist

AND

Floral Magazine.

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CHARLES H. SHINN, - - EDITOR.

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THE

California Horticulturist

AND

FLORAL MAGAZINE.

VOL. IX.

SAN FRANCISCO, JUNE, 1879.

No. 6.

Contributed Articles.

BOTANICAL GARDENS.

By Prof. E. W. HILGARD, University of Cal.

Just as the science of botany represents to the minds of many persons only a dreary mass of hard, jaw-breaking names, belonging to a long list of uninteresting, and chiefly ugly, plants, esteemed mainly on the score of their rarity, so the idea of a "botanical garden" is, in the minds of a very large number of otherwise well-informed persons, associated with that of a usually ill-kept collection of outlandish vegetables, of no interest to any but a few professed botanists, who may occasionally be seen going into ecstasies over some of the worst looking of the lot—apparently for no better reason than that assigned by other connoisseurs for their enthusiasm over a hideously ugly china figure, or a beautifully defined case of malignant pustule.

If this were the true, or necessary, aspect of the botanical garden, it would indeed be vain to plead for its acceptance and adoption into the everyday life, not only of communities but of families. So far from this, however, the only case in which beauty of arrangement and collocation must of ne-

cessity be held second, is that in which the requirements of class instruction oblige us to classify and locate together such plants as, either from a botanical or practical standpoint, belong together, and must therefore be so presented to the view of the student, for the sake of ready co-ordination in his mind. That is to say, only in the case of schools or universities giving *special* instruction.

But there is a wider field of usefulness for the botanical garden, which in some countries it is beginning to occupy in a manner both acceptable and profitable to the general public. Not only on the continent of Europe, but also, and very prominently, among our Australian neighbors, such gardens are becoming a recognized institution of public instruction and utility; not necessarily in connection with any particular educational establishment, but as places of resort; in which, however, not merely such plants as are ordinarily recognized as "good" for his purposes by the landscape gardener, find a place, but where the gardener's skill is directed toward making plants not usually so used, but of economical or scientific importance, and therefore of interest to every educated person, occupy appropriate places; where they will not only not be deemed incongruous, but

will fall into line naturally; and yet, with the help of brief but expressive labels or legends, serve as object lessons, both in an ornamental point of view, and as regards the uses which they subserve.

In times past, it was thought that the practical application of science was a kind of desecration, and unworthy of a high-minded philosopher. The axiom has now come to be almost reversed, and it is at least admitted by all, that the advancement of the material and intellectual progress of mankind is among the very highest offices of science. The men who stand foremost in their departments of knowledge, deem it not beneath their dignity to write those elementary books whose composition has until recently mostly been left to the smatterers, unable to distinguish the essential from the unessential, and presenting to the unhappy learner for his consumption an undigested mass of facts. Even thus the science of ornamental gardening is gradually descending from the barbaric splendor of the times when it gave birth to the stiff figures of the Versailles Gardens, or the fashioning of birds and beasts still indulged in by the gardeners of Japan, to be not only the handmaid of good taste, but also that of utility; in mitigating, by the touch of art, the attribute of "vulgarity" that so generally, yet in very many cases so unjustly, adheres to the useful members of the vegetable kingdom, as well as to those which are not rare, but apt to meet the gaze of the traveler by the wayside. Whoever has traveled much, can not fail to have been impressed with the almost ludicrous contrast of the degree of consideration in which the same plants are held in different countries, according as they are either rare and difficult to cultivate, or common and easy of success.

As communication becomes easier and more frequent, these prejudices fade out, with many others equally ill-founded; and good taste, like weights and measures, and postage, becomes more and more the same everywhere. Plants, likewise, are coming to be more justly estimated for what they *are* rather than for what happens to be the fashion; and the conviction is gaining ground that there is nothing in the vegetable kingdom that can not find an appropriate place in the most artistically designed garden.

This being the case, and it being admitted that interesting and efficient instruction in the natural sciences are among the great desiderata of our educational system, it becomes a mere matter of choice whether our public gardens, and a large proportion of our private ones, shall be made to subserve more or less the purpose of a kindergarten, in which useful instruction is given almost unconsciously to the learner, or whether they shall remain what they mostly are now, an endless repetition of the same trees, shrubs, and flowers that happen to be popular, or are considered "good" by the ornamental gardener of the time. It is, of course, much easier to use the regular hackneyed schedule, than to take plants selected on other grounds than brilliant color or graceful form, and work them into a harmonious whole with the rest. But to do so is the work of the very highest art and science in gardening; and like the writing of elementary text books, can not be successfully done by the mere compiler of others' ideas. That is one of the chief difficulties in rendering our public parks and gardens not only ornamental, but also useful, in this direction.

However much the abstract beauty of a floral display may delight the child,

there is nothing that so fixes the attention of children—and it might well be said of learners of all ages—as the attribute of utility. Let a child be told that a plant before him is very useful, and at once he asks the question, which part of it? how? and where? and why? and the answers received will come up in his mind afterwards, every time that the plant is sighted, and will lead to more questions and fresh interest; a state of things perhaps deprecated by nurses and some parents, but of inestimable value to the child. If our school teachers could find our gardens with even a moderate proportion of such subjects for instruction, how much their task would be facilitated. Instead of that, the school house is usually surrounded by a waste of weeds, and public as well as private gardens afford only the well-known round of plants selected for their showiness. In the meantime, the pupils finish their educational course in blissful ignorance of the nature of the most ordinary articles of everyday use; possibly aware that figs do not grow on thistles, but hopelessly at sea as to whether the potato is the fruit of the plant, whether cotton is made of the stalk, or linen is the wool of the linseed.

There has been some talk of establishing botanical gardens in sundry cities of this State, but the idea has not enlisted much interest; doubtless chiefly from a doubt both of the utility of such establishments to the general public, and of its finding favor and aid. I think that the plan here suggested in general, judiciously carried out, would not only render the garden a general favorite, but highly useful as well; and that the example of the cities would be numerous followed both by communities and individuals, when it is once understood how easily, in this instance,

high beauty and high utility may be combined. The climate of California affords opportunities for the representation of the economic plants of an unusually wide range of other climates; and apart from the consideration of instruction, that of thus testing the adaptability of new culture plants to the several localities, adds interest to the results to be attained.

A ROSE CARNIVAL IN SANTA BARBARA

By MRS. N. W. WINTON.

Our Eastern friends, as yet snow and storm bound, would have opened their eyes in amazement at the outcome of an invitation from the artist President of our incipient Academy of Sciences, to hold an exhibition of named varieties of Roses at his studio, a room admirably fitted for the purpose, for its extra size and proximity to the fine library rooms in which to accommodate its inevitable overflow. By half past nine on Friday, April 18th, they might have seen a procession of Roses from the Mission to the Odd Fellows' Building, nearly two miles in length—"to the right of us, to the left of us" many times "six hundred"—any lingering doubt as to the success of the enterprise being thus annihilated. The work of assorting and decorating went bravely on—Ferns, hanging baskets, Palms, and Callas, to which the most aspiring individuals must look up, graced the walls, centre-pieces, and mantles, contrasting rarely with the fine collections in conchology and scenes from many lands portrayed in enduring forms of wondrous beauty by the brush of our gifted host, Mr. Ford. Presently, out of apparently hopeless chaos, came order and beauty and infinite loveliness. Roses dyed in carmine and old gold and tints of the sea shell; Roses with great creamy

hearts and royal in hues of the sunset; a world of buds and blooms, and swinging censers of perfume. All else gave way to the Queen of Flowers; apologetically crept in a few rare things, some of the newer sorts of *Amaryllis*, *Arundo donax*, *Ozothamnus*, *Diosmifolia*, *Bougainvillia*, *Paulonia Imperialis*—that fine addition to our flowering trees. A new evergreen to us was the *Fruella*, from the grounds of Mr. Sexton, a stray seedling, whose graceful thread-like sprays aroused the desire of every beholder to know the whereabouts of a nursery of this beautiful addition to our evergreen collections. *Durantia variegata*, as a foliage plant, found many admirers, though it required singularly fine floral specimens to attract any attention, the avowed purpose of the exhibition being Roses. Visitors were seen, after their first exclamations of delight, passing around from table to table, note book in hand, adding notes for more intelligent guidance in their future Rose culture, and settling questions of identity as to names with the deepest apparent interest. An informal committee of Rose culturists gave their time on Saturday to the examination of each named collection as to numbers, and the correction of wrongly labeled varieties. Many interrogation points are found in questionable cases, as labels are notoriously evanescent property. Some questions were left over until next year. A first class Rose, of the color of *Gloire de Dijon*, habit of *Reine du Portugal*, with a distinct thread-like margin of maroon, has one so adjourned. Two samples came from different gardens, one labeled "*Ade-laide Ristori*," which is evidently a mistake, as that variety is not so described. If any of your readers can give the true name it will be a favor. The nearest to the description is "*Eugenia*," which

I have not seen. The six Roses which attracted the most attention were "*Marie Van Houtte*," yellow with a tinge of rose deepening with age, indescribably beautiful. "*Nephtos*," pure white, whose long pointed buds brought the note books into play at once; a full blown one measured eighteen inches around. "*Perle de Jardin*," in golden beauty, was scarcely less attractive; while a new sensation was found in the color of "*La Nankin*," a true novelty, and a decided improvement on *La Jonquil*, unique though somewhat the same color, but not nearly so double. "*Mad. Pernet*," in a deep, pink cup form, is a decided advance on the deep pink Roses, while a centre-piece on Dr. Dimmick's table of the Archduke Charles—or more fully named "*Mutabuis*"—attracted much attention, running over the gamut of color, as it does, from palest pink to dark crimson. Between these six ranged more than two hundred others. One collection exhibited one hundred and eight varieties, with one hundred more to hear from. The committee decided that it was safe to call our collection in cultivation here something over three hundred, mostly Teas, Chinas, Noisettes, and Burbons, with a few Hybrid Perpetuals. Of these, *Paul Neron* in pink, *Charles Lefevre* in crimson, *Reine Notting* in deep velvet maroon, and *Vulcan* in blackish purple, gave most satisfaction. Only about two-thirds of each collection were out, as many young plants were not in bloom so early in the month. If we hold our Rose Reception a week later next year, we shall secure more varieties, and to which we cordially invite the editor of the *HORTICULTURIST* and its readers. It is a question if as fine a display of Roses grown in open air can be made elsewhere. Who will accept the challenge?

CATALOGUE OF CALIFORNIA FERNS.

By C. L. ANDERSON, M. D., Santa Cruz, Cal.

POLYPODIUM. (Polypody.)

vulgare L. Northern.

Scouleri, H. & G. Central, rare.

Californicum, Kaulf. Common.

There are several other species credited to California. I think a careful study of the genus as it occurs in our State would reduce the number of species to one or two. *P. Californicum* is exceedingly variable, according to the place it grows. Its different forms have led to a variety of names, such as *intermedium falcatum*, *occidentale*, etc.; but there does not seem to be need for so many species. And it is possible that *P. vulgare*, which is credited to northern California and Oregon, may include all the rest.

GYMNOGRAMME. (Gold and Silver Fern.)

triangularis, Kf. Common.

A beautiful plant with deep green leaves on the upper side, and silver or golden-dusted underneath, according to age.

NOTHOLAENA. (Cloak Fern.)

candida, Hooker. Southern.

Parryi, Eaton. Southern.

Newberryi, Eaton. Southern.

These beautiful little ferns are not found much north of San Diego. The *N. Newberryi* is a beautiful velvety fern of uncommon attraction. *N. candida* has a fine colored powder, somewhat like that of our *Gymnogramme*.

CHEILANTHES. (Lip Fern.)

Californica, Mett. "Lace Fern." Santa Barbara, San Diego, Santa Cruz, Yosemite, and north to Butte County. Somewhat rare. Rocky crevices.

viscida, Davenport. South-eastern to Downieville. Discovered by Lemmon and Parry.

Cooperæ, Eaton. Southern. Santa Barbara, Mrs. Elwood Cooper.

gracillima, Eaton. Northern.

Fendleri, Hooker. From Mt. Diablo south.

Clevelandii, Eaton. Southern.

myriophylla, Desv. Lake County to San Diego.

A beautiful genus, most abundant in dry and barren regions, among rocks.

CRYPTOGRAMME. (Allosorus of some authors.)

acrostichoides, R. Brown. Western side of the Sierras, from northern to southern.

PELLÆA. (Cliff Brake.)

Breweri, Eaton. High Sierras. Hope Valley.

Bridgesii, Hooker. High Sierras.

Wrightiana, Hooker. High central Sierras to San Diego.

ornithopus, Hooker. Common on sandy hill-sides. Central.

brachyptera, Baker. Northern Sierras.

andromedæfolia, Fee. Common from Santa Cruz south.

densa, Hooker. Yosemite and in Sierras, north and south.

A very pretty genus of ferns, easily cultivated, and improved as house plants or outdoors.

PTERIS. (Common Brake.)

aquilina, L. Found everywhere around the globe. Ours is a var. called *lanuginosa*, and only differs in having a kind of woolly hairs growing on the fronds.

ADIANTUM. (Maidenhair.)

pedatum, L. Moist shaded cliffs of streams throughout the State, as well as U. S.

emarginatum, Hooker. Similar localities, but more general. This is the *A. Chilense*. Central and southern.

tricholepis, Fee. Said to be found by Nuttall at Monterey. I have never seen it.

Capillus-Veneris, L. Southern.

LOMARIA. (Jointed Pod Fern.)

spicant, Desv. From Santa Cruz to Oregon. Deep ravines in mountains. Rare below central California. The fruiting fronds resemble slender bean pods.

WOODWARDIA. (Chain Fern.)

radicans, var. *Americana*, Hooker. From Santa Cruz Mountains to Santa Barbara; also, north in Yuba County. One of our largest and most showy ferns. In the mountains about springs.

ASPLENIUM. (Spleenwort.)

trichomanes L., var. *incisum*, Moore. S. Diego.

Filix-femina, Bernh. Common along beds of mountain streams throughout the State. Var. *rhæticum*, Moore, found by Miss Pelton, 1877. Locality not given.

PHEGopteris. (Beech Fern.)

polypodioides, Fee. Said to exist in northern California.

alpestris, Mett. Highest Sierras. Found by Miller and Lemmon.

ASPIDIUM. (Shield or Wood Fern.)

munitum, Kaulf. Central and northern. Vars. *nudatum* and *imbricans*, Eaton, are found in the Sierras.

aculeatum, Swartz. In Santa Cruz Mountains. One form of this has been known as *A. Californicum*.

Nevadense, Eaton. Sierras.

patens, Swartz. Santa Barbara, Mrs. Cooper.

argutum, Kaulf. Central and southern. Perhaps north.

CYSTOPTERIS. (Bladder Fern.)

fragilis, Bernh. Throughout California, including the var. *dentata*, Hooker. Extremely variable.

WOODSIA.

scopolina, Eaton. Found by John Muir, probably in the Sierras.

BOTRYCHIUM. (Moonwort.)

simplex, Hitch. Yosemite. John Muir.

ternatum, Swartz. Northern Sierras.

Virginianum, Swartz. Locality not given.

In compiling this catalogue I am pleased to express my indebtedness to Prof. Eaton, of Yale College, as every lover of ferns should do, for valuable information. I am likewise indebted to Geo. E. Davenport, not only for valuable exchanges and aid in the study of our ferns, but for a copy of his "Catalogue of the 'Davenport Herbarium' of North American Ferns," belonging to the Massachusetts Horticultural Society, of Boston, from which I have been enabled to compile this catalogue with greater facility and correctness. I have not included in this list many doubtful species. Nearly all are in my herbarium.

There are sixteen genera and forty-three species in California. Further discoveries will doubtless increase the number; while it is likely some few species mentioned may not hold good, but come within other specific limits.

A WOMAN lacks gumption when she plants small flower seeds in the same way as her husband does melons and corn.

STRAY NOTES ON FOSSIL BOTANY, AND THE ADVANTAGES OF ITS STUDY.

By LORENZO G. YATES, Centreville, Cal.

No. 1.

The study of the fossil vegetation of any region or locality is interesting to the botanist and horticulturist who thereby gain a knowledge (somewhat limited however) of the genera and species of plants which flourished in the locality during pre-historic ages, showing the succession or evolution of plant life. It is also a subject of much interest to many others, not strictly botanists; as, for example, to the geologist, who, from the study of the fossil vegetation, its condition, situation, and surroundings, is enabled to describe the orographic geography of the region, the character of the soil, and the waters flowing in and through the soil during past geological periods; and in many instances it furnishes him the principal or only reliable aid in the determination of the geological age of the rocks in which the remains are found imbedded, and many other important facts necessary for the proper reading of the "testimony of the rocks."

It is also more or less interesting to the unscientific observer, giving him ocular evidences of former changes in the conditions and character of the surface of the earth and its climate, which when read of appear to many as mere speculation, fairy tales, or the eccentric ravings of some mad scientist.

But the least observing or most illiterate person can not see and examine the trunk of a former tree, changed into solid rock, showing plainly the roots, branches, bark, grain of the wood, and the evidences of the former ravages of insects; or the impression of the leaves imprinted on shale, sandstone, or indurated clay, which may be found hun-

dreds or perhaps thousands of feet below the present surface of the earth—without being convinced that great changes must have taken place in the surface of the surrounding country since the tree or plants grew, especially when they are found in connection with fossil bones and teeth of land and marine animals, and the shells of mollusks. They will begin to think and wonder how it could have come about, and the exercise of a little common sense *must* convince them that the stories told by geologists, of seas having been dried up, or drained by upheaval, and the sediment containing animal and vegetable remains deposited at the bottom of the former ocean in bygone ages, after being covered up by hundreds or thousands of feet of subsequent deposit, might and has been elevated and now forms portions of the mountain ridges.

They will probably be induced to study out something of the circumstances favorable or requisite to cause the great changes which have evidently taken place, and as the interest and fascination attending the study of nature increases rapidly as one advances, so from these small commencements many have been led to study the entire range of the Natural Sciences, having been gradually and almost imperceptibly drawn from the line of study of the phenomena which first attracted their attention and thoughts, in different directions and channels in search of knowledge of nature and its workings, for the satisfaction and pleasure experienced from its attainment, and by reason of which labor and research in pursuit of knowledge become sources of real amusement and recreation from the comparatively uninteresting and unremunerative labors and efforts arising from the continuous endeavors (necessary

with the masses) to solve the great "bread and butter question."

By means of the knowledge of Fossil Botany our student may look down "the long vista of the past," reversing the panorama, and taking as it were his geological telescope, may feast his imagination upon the beauty and luxuriance of the Pliocene Forest as the least remote, and as most resembling the present age.

Having studied out the fragments of the wood and leaves of trees he places them in their several positions in the scale of plant life, finding among them undoubted remnants of magnificent Palms, ("those noble children of the earth and sun"); the Eucalyptus, (which we in central California were supposed to have first introduced from the Southern Hemisphere); the Cinnamon, Fig, Magnolia, Diospyros, and many other trees and plants now restricted to tropical and semi-tropical countries, intermingle with remains of extinct species of the Sycamore, Oak, Walnut, Elm, Ash, Pine and other genera now represented by other and corresponding forms.

The student is now tempted to inquire what changes have taken place in the animal life of the region? And if he carefully follows out the line of study to which the question points, he will be enabled, in his mind's eye, to see the former denizens of the forest and stream in all their wondrous forms and huge dimensions, showing, like the vegetation, a curious admixture of genera and forms of animals found now living in different climates and widely separated countries. He may view with perfect safety the terrific combats between the Mammoth and the mailed Rhinoceros; the stealthy advance of the Imperial Tiger (*Felis imperialis*), equal in size and doubtless no less ferocious than its royal name-

sake of Bengal; the Llama (standing eighteen feet high), whose diminutive living representative is now doing service as a beast of burden in the Andes of South America; the three-toed Horse, well adapted to feed around the edges of the marshes enfringing the islands and peninsulas composing a great portion of the land of the period, in what is now Central California; the Deer, the Hog, and nondescripts which were neither hog, horse, nor ox, but combined characteristics of several now widely separated families. These and many other forms of animals scoured the plains and table lands, roamed in the mountains, or browsed or fed under the shade of trees whose silicified fragments are now found scattered over the plains, or imbedded in drift, or in the "blue gravel" of the "dead rivers" of the Pacific Coast.

FUTURE POSSIBILITIES OF HORTICULTURE.

By S. M. CURLE, M. D., New Zealand.

After reading the January number of the CALIFORNIA HORTICULTURIST, and seeing the science, art, and practice developed in its pages, the future achievements and possibilities of horticulture become a vivid picture before the mind. We have not to go back many years to find the working horticulturist without any science worthy of the name, with an art so crude that the clipped trees, rectilinear plantings, and monstrous productions, were in the worst taste, with a practice consisting of mystery, uncertainty, and want of rule. Now, however, that is all altered, and the writings in the above named admirable periodical will so educate its readers that they will surely strive after the true, the most beautiful, and the best in their several operations and undertakings.

In viewing the best kept garden at the present time, whether botanical or experimental, or only planted for beauty, or profit, it seems hard to realize how difficult it must have been to earlier gardeners to struggle in a rude manner with uncertain performance, rough tools, and other difficulties, and to produce the few poor culinary vegetables and austere fruits then in cultivation. How different is all this at the present; the printing press places within the reach of all the discoveries and improvements of each, and commerce lends her aid, so that which is worthy becomes disseminated to all countries, and placed within the reach of all cultivators.

Such facts as these being admitted, it would seem that the time has now come for a fresh commencement, and that horticulture shall leave behind the uncertain and unsatisfactory practice of the past, and develop itself, so that its science and art shall be studied, taught, and practiced with greater certainty and precision than hitherto. When we see a large collection of fruits, and observe hundreds of varieties of apples, pears, and plums, with their varied flavors, sizes, consistencies, seasons they ripen in, qualities for keeping, etc., let us remember that they have originated from their wild and unsavory parents, and that hundreds of years of chance practice have been taken to bring them to their present conditions, and yet know that any scientific grower can define the means of producing the same result in far less time. Also when we now notice the great varieties of Turnip, Cabbage, Kohl Rabi, etc., and recollect that they have all been made by chance sports from their wild parents, that no one would eat if he could help it, at the present day, and that hundreds of varieties of the Camellia Japonica, the Rose, the Dahlia,

the Fuchsia, Pelargonium, etc., have all been formed in a comparatively short period by horticultural artists:—when we see all this we realize in some degree what is possible.

The scientific botanist taking a plant can explain its characteristics, habitats, description, relations, and place in the scheme, or system, and to what it is related; its artistic capabilities and possibilities are then studied, and its chemical constituents and phytology pointed out, and other practical experiments, cultivation, and tests, to prove the power of development, and bring out its best qualities, placing it in and supplying it with the aid of soil, climate, etc., in a condition to bring about these results.

The governments of the several countries will in the future discover that they must set aside, for properly appointed gardens and experimental grounds, sufficient funds for carrying out the work, and appoint a suitable and numerous staff of officers to grow and experiment with all plants of economic worth which will grow and thrive in their several countries. At present, it is left to private enterprise to obtain new, rare, or valuable plants, and to grow, test, experiment with, preserve, and disseminate those found to be worthy. Much has been done in the past to convert the worthless wild apple into the hundreds of kinds of culinary and dessert apples of all countries, and to make out of the wild original of the Almond, Peach, and Nectarine, with its uneatable covering, and poor kernel, the fine varieties of the Almond, the delicious Nectarine of the present, and the numerous excellent Peaches of many climes. Our culinary vegetables have been developed from innutritious and unpleasant originals, and the valueless Beta vulgaris has been devel-

oped on the one hand into the red beet "of the kitchen garden," and the red and yellow mangel of the fields, on the other hand, into the white beet of the sugar manufacturer, in which some of the varieties on analysis are found to contain over twenty per cent. of sugar. The same development of the beet root has in France, Germany, Russia, and other countries, been the means of giving employment and wealth to millions of individuals. The best culture in gardens and experimental grounds under the direction of skilled horticulturists has produced the improved varieties of Wheat, Oats, Barley, Rye, Hops, Peas, Beans, Potatoes, and other plants now handed to the agriculturist for the ruder field culture, possible to him upon his more extensive operations, and it is recognized that the nearer he can approach the highest form of culture and care, so much better are the results obtained.

Observing what has been done in the past, it will be perceived what is desirable for the future, and where the governments neglect their duties of establishing experimental gardens or grounds, under the charge of an efficient and competent staff to introduce, acclimatize, cultivate, and continue to grow and develop from improved seed—to hybridize, cross, and test them by grafting and other known methods by which the scion and stock mutually react upon each other. To test under varying conditions of different soil, manure of different kinds, more or less moisture, shelter and exposure, and the numerous other circumstances and conditions, becomes a pleasing task for those men who, loving science for its own sake, and wishing to benefit their fellow men, give their time, money, and intellect to this work. Such men search for and find out in all places, new, rare, or se-

lect plants; and having obtained them, grow and cultivate them under test conditions, selecting the finest seed from the choicest plant, and giving it the best chance to develop its good qualities, and by careful management to get rid of those undesirable qualities that it may possess. They also examine by chemical, microscopic, and other tests, all changes taking place in its elements or structure, and keep careful records of all changes observed, so that hereafter they may be available, not only to the original experimenter, but to survivors and others engaged in the same task.

It must also be remembered that out of the great number of species of plants known, and there are now even over two hundred thousand carefully described, not to speak at all of the numerous varieties of each, yet only a very few of these many species are cultivated, but are only found in a state of nature; yet if they were carefully cultivated and tested very many would be of as much use to the world's inhabitants as the cereals, the pomological fruits, the cultivated grasses, the Cotton, Hemp, Flax, Jute, Manilla fibre, and other textile plants; Indigo, Cochineal plants and insect; Madder, Lac, and other color and dye plants; India Rubber and Gutta Percha trees; medicinal plants, timber trees, Boxwood and other woods much required for engravers. The Assam, Japan, China, and many other Tea plants, the Coffee and its many varieties, the numerous Bamboos much used in various industries from a few feet high and less than an inch in diameter, to the gigantic kinds that grow over a hundred feet high and a foot in diameter, are many of them perfectly hardy, and rapid growers in all climates. There are also numerous plants yielding essential oils,

which are purchased by the perfumers and others to the extent in value of thousands of pounds yearly, and other trees, shrubs, and herbs, giving tallow, wax, oils, etc., that are every year sold in tens of thousands of pounds, and for which the demand is practically unlimited. Some plants, the roots and underground stems, and other parts of which are now used, have never been developed, like the potato, but are all capable of improvement. The thousands of grasses and fodder plants, all possessing some individual merit, and but few of which are generally known, and less cultivated — these, and many others, all deserve trial, and by proper means may, numbers of them, be acclimatized and grown in most temperate climates with success. But to do this, as in most other things, time, trouble, thought and labor must be used; above all there must be a determination to succeed, or little will be accomplished. The experimental horticulturist must above all other men possess energy, perseverance, and enthusiasm to carry him on, or the many difficulties in his way will cause him to succumb.

There are many things which the experimental horticulturist must constantly bear in mind — the constant tendency of his plants to change, the ever varying conditions of heat, light, electricity, magnetism, weight of atmosphere, degree of moisture in the air, or soil, prevalence of wind, shelter, influence of former crops on soil, cross or hybrid fertilization by wind, insects, or other causes, permeability of soil to air, or moisture, chemical constituents, and mechanical condition of soil, the activity or latency of its elements, and numerous other circumstances, all of which must be considered and arranged for before successful experiments can be carried out. It is only necessary to

read the results attained by practical men who neglect the scientific method of research, and thus get doubtful and unsatisfactory results, at which they wonder and feel surprised, when their more careful co-workers would have been able to predict the result, and to have pointed out the causes of failure. Thus benefit may be at least gained from a good horticultural journal, and a properly conducted Horticultural Society. The scientific method will be taught, the artistic practice inculcated, and the best practical working described, all leading to the best and most certain results. Having thus far considered our subject generally, it remains to make the application come down to practice, and to descend to particulars and details, and give the result of our own experiments, etc.; but this must be held over for the present to prevent too great space being now occupied.

[We are sure any one after a careful reading of the above article from our valued correspondent in far away New Zealand, will have a new appreciation of the importance of our work. We happen to know that Dr. Curl is most earnestly practicing what he preaches, and is a most earnest worker in the cause of horticulture. We look forward with pleasure to receiving from him accounts of his experiments, believing that one who has so clear an understanding of the importance and possibilities of our art, will have much to tell us that it will do us good to hear. We shall also love to hear of the natural productions of that country. After reading his letter we realize more than ever that there is still a great deal to do.—EDITOR HORTICULTURIST.]

PROF. GRISEBACH, the distinguished German botanist, is dead.

MY NATIVE BULB GARDEN.

By J. B. HICKMAN, San Juan.

My bulb garden is at the base of a northerly hill slope, rather cool and shady, so that many of the bulbs are later in blooming than elsewhere. I cultivate but a small portion of my garden, preferring its natural condition. *Trillium sessile* has been in bloom there since February 15th; and so have *Frittellaria parviflora* and *F. lanceolata*; the latter, however, keeping above the denser shade of tree and fern, nearer to *Liliorhiza lanceolata*, which grows in a heavier soil though brighter sunshine. Higher still on the sandy ridge *Brodæa congesta* and the White Camass opened the last of March, and in moist grassy spots came the first *Calochortus elegans* to bear them company. In the cultivated bed, which contains bulbs from various parts of the State, *Erythronium grandiflorum* was first to bloom, *Allium unifolium*, a stray, blooming with it. Three varieties of native lilies are well up. A single blossom of *Calypso borealis* peeps out from a cluster of *Lilium pardalium*.

About March 1st I noticed the following plants in bloom that I do not notice on other lists: *Echinosperrum* (Stickseed), *Dodecatheon*, *Meadia* in var., large purple Larkspur, *Tellima affinis*, *Nemophila aurita*, a dozen varieties of mints and compositæ, the White Forget-me-not and the *Megarrhiza Marah*, or man-root.

Apropos of your idea of a list of the blooming time of plants, I think that local circumstances may do much to mislead the general reader, as moisture and shelter have much to do with the power of plants to withstand cold. In my flower garden *Veronicas*, *Abutilons*, and *Geraniums* were cut to the ground, while to my surprise a White *Begonia*

lived through, and my Hydrangeas have already regained their leaves.

TREE PRUNING.

By G. HOWATT, Diamond Springs, Cal.

We presume to give your readers a few practical hints on fruit tree culture, proper pruning being indispensably necessary to ultimate success. First they have got to consider what is their object in pruning. They themselves must determine. Pruning promotes growth, and bulk, lessening bulk, modifying form, promoting the formation of blossom buds, enlarging fruit, adjusting the stem and branches to the roots, removal of decayed parts, removal or cure of disease, and formation of tree to any desired shape. After deciding what they want by the look of their tree, in all cases and whatever shape, you must keep in mind that your tree must be open; encourage a proper growth at the bottom—that is your work, as the sap of all trees first goes to the extreme ends, and your finest fruit is at the top of trees, or extreme end of branches. To have your fruit of a uniform size, the great desideratum in all fruit culture, you must equalize your growth of wood according to the health of your tree, size, age, etc. First bear in mind the nurserymen and the orchardists are two distinct classes of men, and pursue a different practice. The nurseryman's object is to attain the quickest and most rapid length of growth he possibly can; in this he is correct; by doing so, he gains his end, by giving you a tree with fine healthy roots and many of them. The orchardist's aim is to secure the greatest number of fruiting spurs, or fruiting wood, as the case may be. To make a success, you must leave the nursery behind you; never think of it, you are working for a diametri-

cally opposite purpose. How often it has been my lot to go through an orchard when the owner would point out to me the fine long growth his trees were making, and ask me if such and such a nurseryman could equal that? I have been forced to ask some, what market they supplied with fishing rods, for fishing poles seemed to be their business of growing. My knife has itched my hands to get at them. How few men will you hear say how is that for fruiting wood, or do you think that is good fruit wood?

As your trees begin to break (grow), when a couple or even one inch long, remove the extra growth after deciding where you are to have your branches. When you get this stem two feet long, stop it—that is, nip the top out; all this is done with the finger and thumb, and by so doing you save your muscles, saws, and knife. This stopping throws the sap back, swells your wood and ripens it, your branches will throw laterals or side shoots; again remove all overplus of them, thus throwing your sap directly where you want it for fruit. Those that are skeptical in thus keeping a tree open, let them now take a fruit tree, tie a rope to the top branch, tie it as close to the ground as they can, making a bow of the branch or rather all branches; they will then see their fruit is about all one size from bottom to the top branch; this equalizes the sap. What is the reason that you have to prop up a branch of a tree? If you will only apply to your own common sense, you will be answered—from the weight of the fruit at the tops. Why? because the sap all runs there. Take that whole mass of fruit and distribute its weight from bottom to top of branch, and your branch will remain in a perpendicular position. What in this world looks so bad as a lot of naked sticks

propping up a lot of fine looking fruit—those sticks kill all its beauty; or for instance hang a one hundred pound weight at the top of a branch and you will certainly split it from the main stem; distribute that one hundred pounds from bottom to the top branch, and it will not affect its natural position; you can then discard the naked poles—you can make your young trees so completely. You can, by a little judicious pruning, make your old trees subservient to your wish. We have seen it stated and asserted, that it will not pay to prune trees, labor being too high and all that sort of bosh, but we have yet to see one verified statement to that effect; talk is cheap, and laziness is like gold, the more you have of it the more you want.

Plant out ten trees of one variety on the same ground; prune and treat every alternate tree properly; keep an account that you can swear to for five years, and you can then determine whether it will pay to prune or not. Echo answers, it will pay to prune. We do not pretend to say that large orchardists can do it properly; their time and that class of labor necessary can not be had; but as the Irishman said, if he didn't knock him down, he staggered him, *shure!* With amateurs, the case is different; they can do it easily; the few trees they have require only their own time, and, of course, it is for those I mean this article. If they will only take a pride in it, it will be done, and what is more beautiful than a handsome tree; let them try to excel their neighbors, and they will succeed.

THE CALIFORNIA HORTICULTURIST for May is one of the most interesting and instructive numbers of this admirable magazine that has yet been issued.—*Contra Costa Gazette.*

THE HEART OF THE SAN JOAQUIN.

By CHARLES H. SHINN.

The best and most populous part of San Joaquin County lies east of the river of that name. Three rivers, the Stanislaus, the Calaveras, and the Mokelumne, flow across this region. The best lands in the county are along these rivers, or on islands in the great belt of swamp and tide-overflowed lands which skirts the western side of the county. This, the east side of San Joaquin, is a fertile and well settled territory. The people are prosperous as a rule, and are, in a measure, beginning to improve their farms. The towns are growing with the growth of the communities. Manufactures are mainly carried on in the city of Stockton, where there are tanneries, foundries, a paper mill, machine shops, and lesser industries too numerous to mention.

This young city of Stockton is a place of windmills, and likewise a region of sloughs or water channels, dry in summer, but apt to be full in winter. It is a place of ancient renown; an old centre of many mining excitements, and fearless mountain expeditions. Stockton has known all of early California which was ever worth knowing; it is a part of history. How it grew awhile, stagnated, then took a fresh start; how it came to have street cars, sidewalks, and other conveniences—are not these written in the elegant pages of the county directory?

Some of the other towns of the county are Lodi, Woodbridge, Acampo, Lockeford, French Camp, Atlanta, Linden, Farmington, Colledgeville, Bellota, and New Hope. There are quite a number of minor villages, post-office corners, and germs of local activity displayed in wayside blacksmith shops. Roads are numerous and well built, in most cases.

They reach out from Stockton like the spokes of a wheel, and there is much travel over them.

Everywhere the gardens of the people show a growing care and attention. Plants in boxes near the door are almost universal. The scarlet geranium and basket plants are favorites here. The circumscribed gardens are always worth study. Sometimes we notice the earnest attempt to make a lovely rock-work, and the affair is a success in direct proportion to its informality. Will you build a rock-mound which shall have a reason and excuse for being? Then leave polished slabs of rock alone, abhor round boulders, and utterly detest bricks, or pottery, and don't you be inveigled into the use of painted boards. Go picnicing until on some ridge, or beside some murmuring stream, or along some ancient beach, you find picturesque, irregular, moss-covered fragments of stone; and if you do not find enough the first time it will be an excuse for another picnic. Then pile them up so that the crevices will run downward and towards the centre. Pack the earth closely as you build, satisfy yourself, and having planted Agaves, Sedums, Echeverias, Cacti and other hot weather plants, be content to wait, for its glory will not be far distant.

At one place in San Joaquin County there is an old-fashioned farmhouse in a bend of the willow-bordered Mokelumne, and hid, far past the eaves, with locust leaves and snowy tassels of bloom, while crimson roses clung to the unpainted walls, massing themselves in gorgeous flashes of color, and even mingling in daring challenge with the white locust blossoms above the eaves. The little garden, reaching out from under the trees, so that part was in sun and part in shade, was a quaint, old-fashioned affair, which brought, in

some strange, wandering fashion, a memory of a village garden dear to the heart of childhood. There was a garden once where there was a white lilac, and a purple one, twin masses of jasmine, roses, lilies, and fragrant things all about; old-fashioned annuals growing up instead of weeds, and little girls and boys playing happily in the wide walks or on the green turf under the trees. Where is it, you ask? It lieth in the land of Remembrance, very near the beginning.

Well, this memory-bringing garden beside the swift Mokelumne was one of those things which a wandering flower-lover would hail with delight—it was a wilderness of roses, and of wild flowers brought from the hills, and of green-stemmed lilies almost ready to bud. We are not making a catalogue, but only registering impressions. Shall we say there was one *Agave Utahense*, one *Yucca Whipplei*, and, in like manner, state formally that which was in this nameless garden? It is better to leave the picture without any confusing lines—a sunny, spring-time picture of a quiet, happy home in this our golden State, which we love and for whose prosperity we labor.

Traveling in California has been too often done by stage and railroad. We venture to assert that not one of the thousands of Eastern and European visitors who come here every summer and go to the Geysers, Big Trees, Yosemite, Santa Barbara, and other places of renown, can have a clear or accurate knowledge of our people, our resources, our climate, our hopes, or our prosperity. In the very nature of the case one who passes over the main lines of travel will often miss the most beautiful parts of the country. A stage road sometimes follows a ridge between dark ravines, for the sake of economy in

distance, and only blind cliffs and broken rocks are visible for miles, although just over the ridge, perhaps, there is a smiling valley with a winding stream, and sunlit farms in folds of blossoming orchard. Therefore it is that California, although visited so often by tourists of every type, is still so full of unfrequented and almost absolutely unknown nooks and corners. The only way to really and fairly see our State is to travel on horseback, or in a light wagon, taking the entire summer, and visiting the southern counties in winter and spring, passing northward towards the high Sierras as summer advances. Thus, and thus only, the lanes and byways and wonderful regions of a strange, mysterious land will be revealed—will be as living friends through all the hereafter.

In this very county of San Joaquin, which embraces a great variety of soil and climate, the main routes traveled by tourist and visitor show very little of the country. It is necessary, in order to obtain a proper knowledge of the resources and industries of the people, to spend some time in following clear to the county line each one of the numerous roads which lead from Stockton. No two are alike, and none are wearisome.

Now there is a road which leads east, past the red brick tower of the State Insane Asylum, and winds on and on to the foothill region of Bellota. This pleasant road is, at first, occupied chiefly with the task of releasing itself from the trailing fringes of the city—the forlorn cabins, patched up fences, beer shops, corner groceries, rows of tenement houses, slaughter yards, and general confusion. Sooner and more easily, however, than in most cities, the road we follow passes in safety through this state of transition, and is

transformed from a city street into a country turnpike. It is a level region for fifteen miles east. We are now in the heart of the great central valley of California, which extends from Reading, Shasta County, on the north, to the limits of Tulare County on the south. Towards the north it is called the Sacramento Valley, and towards the south the San Joaquin Valley, from the rivers of that name. For miles in either direction, an almost level plain extends, dotted with live oaks and white oaks, the latter in their freshest coat of green.

As we ride forward, towards the glimmering peaks and shining walls of the Sierras, we pass farm after farm where there is every sign of prosperity and intelligence. There is one almost unbroken succession of wheat-fields which sweep to the very horizon's verge and melt out of sight, with faint undulations. The farms are mostly large, ranging in size from three hundred to two thousand acres. Land ranges in value from forty-five to one hundred dollars. The best land is near the river. Good, substantial fences, large, comfortable farm-houses, and barns overflowing, are characteristics of this region.

Slowly, however, the scene changes. We pass the classic village of Waterloo, where, by a curious freak of history-repeating fate, there were both French and English settlers. Years ago, in the earlier days of California, who, quarreling over land questions, did then and there enter into a squatter war, and fought a battle in sober earnest, but in most unconscious burlesque, which battle, hitherto in no wise recorded, shall go down to posterity's grateful admiration as Waterloo the Lesser!

South-east of Waterloo, in the midst of a lovely farming region, is Linden,

a quiet little town situated in a grove of oaks. South fifteen miles is Farmington, one of the stations on the Oakdale railroad. The level fields of the valley begin to change their character near Linden. They exhibit a greater variety of surface, and winding water-channels cross them in every direction. These water-ways are called sloughs in this section, and they are full to the brim in winter, so that the whole country for miles is a net-work of linked and inter-linked sluggish streams, muddy of course, and forming a natural drainage. If it were not for these channels the rain-fall in the mountains would raise most dangerous floods, and sweep across the valley to the destruction of life and property, but as it is, the surplus of the rivers is distributed through these channels over a wide extent of country. It is not an advisable move for a traveler to attempt to cross one of these sluggish, yellow sloughs unless he has indubitable evidence that some one else has crossed at that point. It is not safe to wander from the road and make experiments whose ultimate results may be of a chilly nature. As a matter of intense interest and pure excitement we commend the attempt to cross one of these larger sloughs at an untried point, and after a heavy rain.

North-east of Linden, in a narrow valley, shut in by rounded hills, is a quaint, not often visited, village, by name Bellota. This means the "place of acorns," and it was in earlier days a dense forest of Oak, but now is a succession of small ranches and clearings alternated with belts of timber or island-like copses. The Calaveras River, fresh from its snowy heights, foams down the valley, and divides the town in twain. In the beginning of dusk, while the hills were yet pale with sunset gold, and the ravines were full of a weird pallor and

faltering darkness, we rode into the valley, seeing far off the belts of timber, and following on, past wide lagoons and noisy mud-folk, until we crossed the narrow sycamore-shaded bridge, and were verily in Bellota. The next day, tracing the complex windings of the streams towards the east, and riding over many a wind-swept slope, in the pleasant April sun, we found that it was flower-land as well as acorn-land. Mile-wide slopes blue with the bluest of *Nemophilas*; mile-wide slopes yellow with Buttercups, or orange with *Eschscholtzias*; mile-wide slopes of *Dodecatheons*, or of *Castilleias*, or of wild Violets. Wherever the spring flowers of California are left to arrange themselves undisturbed, they gather in groups, with very little intermixture of species. You will, on one hill-side, at this season, find *Gilias* in abundance, of half a dozen species; on a neighboring slope you will find no *Gilias*, but an abundance of *Compositæ*. In the tall grass the *Brodeas* toss their purple crowns, and the blue Larkspurs gather in nodding clusters. Wherever the eye wanders there is a flash of color set in the restfulness of deep emerald and over-arched by a sky of perfect azure. This is a peaceful land of almost Arcadian simplicity. Though the world be full of toil, deep clamors, and pain, here there is rest continual, starlit nights, and royal days. Close to the beating heart of nature tired men may lie, feeling the tremble of her unheard songs, and gathering strength for the coming days. This is not a land of mountain heights, but a land of the fairest, dreamiest hills lying at the very gates of the storm-rent Sierras, adding to the home-like beauty of the valley no small portion of the intangible mountain charm.

From Bellota there are roads leading east into Calaveras County, and others

north, over the red foothill land, until within a few years used only for pasture, but now considered worth something for wheat, and for vineyards. There are many thousands of acres of this kind of land in the State—foothill land, covered with scrub oak and chaparral, once thought worthless, but now being settled quite rapidly. The larger proportion of the government land yet remaining in this State is of this character. Its adaptability to fruit culture is undoubted.

The southern part of San Joaquin County is not as yet thickly settled, nor will it ever carry as large a population as will the central and northern parts. The general character of the soil for miles is that of a deep sand rather compact, and yielding good crops sometimes, but liable to fail entirely. In a wet season the grain which is shipped from this section excels in quality and is in quantity enormous. Several charming gardens lie on the main road to Atlanta. Japan Privet, we observe, is used in several places for hedges. A favorite ornament for the garden, in this locality, is made by driving a stake down, and arranging four or five old pans of different sizes upon it. It is customary to cut a hole in the middle of the pan, so that it will slip over the stake, and then keep it up by nails underneath. The largest pan is put on first; they are arranged at equal intervals, and are then filled with rich earth in which vines are planted. The upper pan is filled with Portulaccas, China Pinks, Petunias, or Geraniums. There is no patent on the idea.

Some of the sand plains are uncultivated, and for miles unfenced, being used for pasture by the owners. For depth of color and perfection of the natural massing, or patch-work system, these wild pastures are, in this month

of flowers, without a rival. The range of species is narrow; but their luxuriance, in this warm, growing weather is marvelous. You see the wild flowers on these warm plains must hurry up, or there will not be time to ripen their seeds. In three months this plain will be a wind-swept, brown waste, from which even the memory of spring has departed. But the ripe seeds will lie in the dry dust, awaiting the rain-heralds and storms of another winter. That is the way things go here. Meanwhile, in plain sight, rise the snow-peaks, on whose sides chilly buds linger, and early blossoms as yet are not, and spring is a far off dream. One day's ride from these sand plains would bring us to where the grass is just beginning to appear. Is it not a land of contrasts?

The western and north-western portions of San Joaquin are Holland-like marshes, islands surrounded by dykes, here called levees, wide, rich pasture lands, where thousands of fine beef and milch cattle roam, sloughs which are like rivers, and wastes of tule and swamp grass as yet too far off to be profitably reclaimed. Here is an expanse of the richest possible soil, extending over a territory which is thirty miles long by twenty miles wide. Ages of decaying vegetation helped to fertilize this region, and here, in the tules of San Joaquin, lies a vast and productive empire whose extent and value we hardly realize. The leading islands are Roberts, embracing sixty thousand acres; Union, with forty thousand acres; Baldwin, with seven or eight thousand acres; Staten, with ten thousand; besides smaller islands and marshes which touch on the mainland. Some of the reclaiming has been done by home capitalists, prominent among whom may be mentioned Gen. Williams on Union Island, and the Sargent Brothers near

New Hope. Foreign capital has done much, the Glasgow Reclamation Co. on Roberts Island being the principal investor.

Correspondence.

[The editor of the CALIFORNIA HORTICULTURIST cordially invites all persons interested in any branch of horticulture to send practical questions and notes of their own successes and failures. A brief, unadorned statement of events in one little garden may often prove of universal interest. Short notes from busy people, all over the Coast, will make this Department fresh and valuable.]

NOTES FROM VENTURA.

EDITOR HORTICULTURIST—Sir: There is a new, glad hope in the heart of many a grower of grain, and of many a man who has flocks and herds, and of merchants and traders whose prospects were drear and dark a few short days ago. April has already given us full two inches of much needed rain, and it came to us at the right time, and in the right manner. Not pouring down in torrents like rains in January, or like the cold, cutting, shivering winds in February, it descended in a warm soothing shower on the thirsty earth, like the loving kiss of a fond mother on the brow of her weary child. It has driven the clouds of foreboded disaster from many a brow in Southern California, and filled many a joyless heart with sunshine and gladness.

Last season there was too much rain for a good yield of crops in Ventura; this year there is plenty of rain, but not enough to cause grain to fall or rust as it did last season. I believe all the orchards in Ventura bid fair for a good yield of fruit. The trees immediately near the coast are somewhat later than those further inland. My Cliff Glen Orchard is looking exceedingly well for this time of the year. A few blossoms still linger among the boughs of the apple and cherry trees, as if loath to

leave and rob the poor tree of its beauty. But nearly all the bright blossoms from every variety of fruit, long since surrendered their place on the trees to the tiny clusters of baby fruit, which now sway on every sprig and branch amid the rapidly enlarging leaves.

My orange and lemon trees have never before made such a fine spring growth as this. The leaves are larger and of a more glossy green than is usual for the early spring, while the new feathery shoots which spring from every limb and bough, disclose a vigorous growth. But of all the beautiful trees which bloom in spring, the lemon tree is the most lovely. Even in the bright, brilliant spring, when all the trees of the orchard are decked in flowers, the lemon is the queen of all; it is the Venus of spring. Its bright green, velvety leaves, and branches tipped with sprigs of glossy, purple shoots, all combine to lend an additional charm to the sprays of snow-white blossoms which peep through the foliage of this symmetrical tree. Were it not that our interests require a harvest time, we could wish that beautiful spring lasted all the year round; but as it is, we find happiness in the beauty of the present, and in anticipating wealth when harvest comes. But failure to crops can come in so many forms that there is chance for many a heart-ache from disappointment ere the grain be gathered in our granaries this fall.

ROBERT LYON.

Cliff Glen, Ventura, April 12th, 1879.

HOW TO GROW FUCHSIAS.

EDITOR HORTICULTURIST:—Noticing in the May number of your magazine an inquiry as to the best method of treating the Fuchsia, I send you the result of my experience.

1st. I would say that the Fuchsia,

according to my observation, does not like much sunshine, and thrives best when so planted as to have only two or three hours exposure to the direct rays of the sun. I have seen them very thrifty on the north side of a house where the sun never shone on them.

2nd. The Fuchsia loves rich mellow soil. The roots are fine and if the soil is clay or adobe they will not thrive. A good deal of sand must be added to rich soil and thoroughly mixed in. Then let it be made rich if necessary by a top dressing of manure, which will answer the double purpose of keeping the surface moist, and enriching the soil. If so situated that you can not obtain manure, you can use soot, but do not use too much as it is very powerful. You can also save all the tea leaves from the tea-pot and spread them on the surface of the soil, where they will decay and enrich it.

To put it all in a few words, I find that Fuchsias love moisture, shade, and a rich mellow soil. I remember reading that on the island of Guernsey in the British Channel the Fuchsia becomes almost a tree, and in California at Oakland, and about San Francisco, are specimens that will in time no doubt equal them, and for the same reason, viz.: because they have a cool, moist atmosphere.

L. NILES.

May 6th, 1879.

SEQUIOIAS AND THEIR SPORTS.

EDITOR HORTICULTURIST:—The reference to our redwood variegation in your last number recalled so many fruitless efforts in the past years to utilize the beautiful markings in these giants of the forests that I may at least enlighten—if not amuse—your readers with my misfortunes. Ten years ago I first saw the remarkable yellowish-white or pale straw-colored sports of the Sequoia

sempervirens, and, having some young seedlings in fine health, at once attempted to graft them; but I could not effect a union between the scion and stock, hence they died. Every conceivable form of grafting was resorted to to insure success, but no use—diseased nature could not and would not grow. Cuttings we placed in sand, in heat, in water—only to perish: and it was only in after years, after having tried every year to grow them, only to meet with defeat, that I learned the *why*—and the *why* was plain enough when understood. Variegated foliaged plants of the most beautiful leaf and stem markings are now plentifully seen in all fine grounds or lawns and conservatories; yet we rarely see even a lateral that has not more or less green mixed in the variegation. The green coloring in sap, leaf, and bark structure is the all important and vital element of life in all plant growth, and we never find plant-life except this coloring is present; and we never yet have succeeded to grow a cutting or graft when there was no natural growth of sap-life to give vitality. Cuttings of the variegated Sequoias will callus but not root because of the above reasons: ours has been defeat caused by an ignorance of the common law of plant-life.

AMATEUR.

AVENUE PLANTING.

MR. EDITOR:—I have been very much interested in the avenue spoken of in the May number of your magazine. It seems to me that the planting of such an avenue should not be done precipitately, but should have a great deal of thought and study put into it before anything at all is planted.

I mention a few trees and hedge plants. As I am unacquainted with the soil and climate of that section, I

can not tell whether they will succeed there; that can only be decided by experiment, or by comparison with similar sections.

In an avenue fifteen miles long and one hundred and thirty feet wide, broad-spreading deciduous trees would be preferable. Broad-spreading, because of the shade they would afford in summer, and because trees with pointed heads would seem rather stiff for so long an avenue. Deciduous, because evergreens would shade the road in the winter and cause it to become muddy. [Residents of Santa Clara tell us that their beautiful avenue is almost impassable with mud in winter.—ED.]

If the main avenue were lined with broad-spreading trees, and the intersecting ones with straight-growing ones, the effect would be good.

The prevailing idea is, that an avenue should be lined by the same kind of trees throughout. This is true for a short avenue, but for one fifteen miles long, fifteen kinds would not be too many. Fifteen would be a good number, because the miles would be clearly shown by the change in the kind of trees. Of course, trees of the same general growth should be used.

For a hedge, the California Holly is a very good plant, its only fault being that it can not be transplanted. Either one kind of hedge-plant should be used throughout, or fifteen kinds, changing as the trees change.

LIST OF TREES: California Walnut, Black Walnut, California Maple, Spanish Chestnut, Beech, Butternut, Deciduous Cypress, Magnolia Acuminata, White Oak, Post Oak, Linden, Elm, Locust, Paulonia Imperialis, Kentucky Coffeenut, Catalpa, Maiden-hair Fern-tree.

HEDGE PLANTS: California Holly, Eucynymus, Lime, Privet, Laurestinus,

Oleander, Gouveniana, Cypress, Roses every alternate mile.

J. C. S., NILES.

A LETTER FROM TURKEY.

An old friend of ours, Miss Julia A. Rappleye, now, and for some years past, missionary at Broussa, in Turkey, has sent us a letter of congratulation and pleasant wishes. A portion of her letter is so vividly descriptive of the country that we venture to quote a few paragraphs for the benefit of our readers, many of whom will remember Miss Rappleye, so long an enthusiastic teacher in Oakland.

She says: "The flora of Turkey, so far as I have seen it, is very much like that of California. I have often had my heart flutter at the sight of some flower, peeping forth from the rocks and thickets, that used to be so familiar to me in my California homes. The seasons, too, correspond with those in the vicinity of Oakland.

"Fruit trees blossom in February. The summers are almost entirely without rain. In winter there is more snow here than in California. I have tried to raise the Eucalyptus here, but the severe winters kill it. The Turkish cemeteries, which are scattered all over the cities, are filled with the Cypress tree, very tall, and very slender, rising above the minarets of the mosques near which they are often planted. The natural forests are principally of Sycamore, Chestnut, Oak, and various mountain Pines. The Chestnut is a large, noble-looking tree, the fruit being very large, and used by the natives as food. They boil them with meat. The Judas tree, with its rose-colored papilionaceous flowers, is very conspicuous just now.

"As I have made several tours through the country since I came to Broussa, I have always been struck with the new-

ness of the country in appearance. The people crowd into the cities and villages, and the immense natural resources of the country are left undeveloped. The first time I went into the country in California, away from San Francisco, I found myself constantly exclaiming—'All this accomplished in twenty years! Is this a new State? I can not believe it!' But here, in this old, old country, all seems yet new and crude. If Americans could control Asia Minor for a score of years, its immense natural resources would be developed to the astonishment of natives and of foreigners. With strange blindness the government has kept its rich mines almost totally undeveloped.

"The effects of the war are just beginning to be felt here. The government has repudiated its notes, and the poor people, with no other currency in their possession, can not get bread. Last night two refugees near us died from hunger. Yesterday a poor Turkish woman left her three fatherless children at a baker's shop, and went home and hung herself, having despaired of getting bread. We are doing all we can, and hope for relief every day.

"J. A. RAPPLEYE.

"Broussa, Turkey, April, 1879."

A GLIMPSE OF RATTLE-SNAKE LIFE.—
EDITOR HORTICULTURIST—Sir: About the middle of April, last year, I observed a hole on the south side of a hill, in which I saw rattle-snakes. There were always a couple on guard—sometimes of a dark gray color, and sometimes of a light gray. From this I supposed there was a nest there. They would not jump at me when I passed near them, and many times I have been able to count their rattles. Some had seven and others had nine rattles. If they were afraid of me they

would slip back into their hole, rattling like broken crockery. When a rattle-snake wants to bite, I have noticed that he raises up his tail and rattles very noisily. In the month of October, I noticed four little ones, two inches outside of the hole, with their parents watching them. They looked very pretty, and were as fat as well fed pups.
A. H., Ukraina.

Editorial Department.

OUR SIERRA FORESTS.

It seems as if California was determined to repeat the mistake, so fatal in its results, which has ruined some of the fairest regions of earth. It is time to sound a warning; the lovers of our State must take a decided stand in the matter. Shall we have miles of forest, clothing the long slopes, crowning the rocky heights, filling the wierd ravines, making our mountain chain a continual wonder, and pride, and endless possession for our children's children? Or shall our rivers fail, our lakes perish, our grasses wither, our wild flowers disappear, our unutterable, snow-white peaks rise in pale sorrow above naked rocks, and dead forests, slain by our own insanity?

Led westward by that earlier Aryan force, our fathers lit their camp-fires in many a dim ravine, and won the heights of many a cloudy mountain land, but never of one fairer or more fitted by nature's gifts to be the mother of mighty men in the fullness of time. Our lives, on this western slope, where there is in every direction, room and a cry for men, press forward with strength and desire. We are a busy, impetuous people; we are laying foundations for the future, and, strange contradiction as it may seem, we are struggling here

with the most subtle problems of older communities, which, nevertheless, we shall meet undismayed. With so much to do it is hardly a wonder, and yet it is no less a danger and shame, that our great and priceless Sierra forests are now, and for years have been, at the mercy of private greed and public theft. Nor is it a matter of little moment that this extensive belt of timber is yearly lessened, not merely by cutting for timber, but by causes within our control. This is not a sentimental fight, carried on by a few tree lovers; it is not merely a professional fight begun by the botanists and nurserymen; it is science against ignorance, and civilization against semi-barbaric methods. Savages cut down, burn, waste; there is, from their standpoint, plenty more. We, on the other hand, have found out that there is a practical and definable limit to food, fire, clothes, capacity of the soil to produce; capacity of men to work, and ultimate supporting power of the world. In the remotest corner of the earth there is nothing which we can afford to waste.

Now, forests are the clustering of many influences, and direct, absolute benefits. If the proportion of forests to cultivated lands be too small the most serious consequences follow most inevitably. If our Sierras are denuded the rivers will change their character and be stormy, uncontrollable torrents in winter. The climate of our great central valley, reaching from Shasta to Kern, will change, and for the worse. A man need not be a prophet, nor the son of a prophet, to see this advancing evil. True, no changes are yet manifest; true, there are miles of forest left, and revines wherein no chopper's axe has yet resounded. What of that? The axe does not seriously threaten the permanence of these forests, for where

trees are cut down, others grow again' in most cases, if the ground is unpastured.

This then is the gist of the trouble—sheep and cattle, owned by private individuals, have for years been pastured on the government lands of the Sierras. It is a fraud and a disgrace. Men have grown rich in the business, and others follow in their footsteps. The common plan has been for a man, having perhaps five or ten thousand head of sheep, to purchase one single quarter section from the government to build his house on, and perhaps to hold the best springs of water. From that central point his flocks and herds roam for miles, under the spicy pines and cedars, trampling the soft, rich ground until it is like iron, destroying every seed, killing all the young trees, and causing the State a yearly loss in the value of her forests, which is far more than the worth of the whole band of sheep. Now, imagine this process repeated in every county of the Sierra belt, and not once only, but a dozen or a hundred times, and our readers will begin to understand that, unless measures of prevention are taken within a few years, those magnificent forests, the grandest on the continent, are irreparably doomed.

The startling significance of the enormous waste occasioned by allowing national property to become private sheep pastures, has been discussed by some of our best thinkers. Prof. Sargent, of Harvard, in the *Nation*, points out the disastrous effects of such a policy; Prof. Hooker, of Kew Gardens, follows in the same line of thought; John Muir mourns over the desecrated forest-shrines, and the rarer flowers and ferns, now rapidly passing out of existence. But although the perishing forests of our Sierras have found some

earnest defenders, the practical work of making laws to embody the necessary safeguards is yet to be done. A forestry law, protecting our priceless domain from destruction, deserves the attention of our legislature, and the support of thoughtful men. We commend this subject to law-makers who would live in the records of a State and in the memories of men. Our Sierra forests must be preserved in their pristine beauty. The older trees may be cut to a reasonable extent, but nothing must interfere with the growth of young trees. This is a living problem of today.

FLOWERS IN THE SCHOOL-YARD.

Our monthly ought to have a word for everyone, so, having spoken of gardens and gardeners, of artists and of literature, we bethink us that everywhere, over our fair State, are busy teacher-folk, with whom we would chat awhile. Nor is it, after all, with the teachers only, but also with the parents who love the healthy growth of schools, and with older pupils who know the brightness and music of flowers. So, after all, we are drifting towards a general invitation—it is not worth while to do half way things; this wayward thought of ours shall belong to everybody.

A month ago we visited a school, no matter where; a nameless village with gentle hollows and high slopes of grass, yellow with buttercups and blue with bluest nemophilas, and shadowy with clumps of oak, through which the sunlight wandered in flickering, wayward dreams. The school-house, a two-story building, of the usual monotonous country school-house style, had room, and to spare, about it. In one corner of the ample yard there were, at the time we approached, it being recess, a busy

group of children of all sizes and descriptions, engaged in gardening of their own free will, and evidently with unbounded delight. There was no teacher near; the older ones weeded the garden beds, the smaller ones worked in the paths; each had, it would seem, a particular corner, and all were well satisfied.

On a close examination we found that the gardens were edged about with bricks, and were really the monuments of much toil. One child had run to wall-flowers, that being the chief product of his real estate; another's handbreadth was blue with flax; a third had sown four-o'clocks broadcast. Some gardens, as was that of our childhood, were full of ambitious plans, not wholly fulfilled, but never an utter despair. Children who make their own gardens, if left in anywise to their own resources, are apt to reveal their own selves most positively; to give a garden to a child is one of the ways of studying childish development. So, we are sure, this school of gardens must be a delightful and acknowledged success.

It is not every teacher, or, let us add, every district, who can begin this good work and carry it to a wise termination. But there is not anywhere a group of children to whom school-gardens can not be made a living beauty, and a constant teacher of good. Wherever there is sufficient ground and water available, even though it must be carried some distance, the school-garden may easily be made an established fact. It will not cost much money. This lady will give flower seeds, and that one will give cuttings, pieces of roots, clumps of iris, daisies, violets, and similar delights. The children, when once deeply interested, will visit everybody who is making a garden, and tease for the surplus; they will take long Saturday rambles

over the fields or hills, and return with roots of wild flowers dug up carefully for their little garden corners.

Then, also, the school-room should shine daily with clusters of leaves and blossoms; it should fairly glow with rich red roses, and the mingled, dreamy, fascinating breath of many flowers should fill the busy room, and help to make it a happy place for the growing souls. Smilax, filling up the windows with its long and graceful streams; blue lobelias in a basket just where the morning sun glints across; flower pictures framed on the wall; immortelles and dried grasses for winter; books of coarse brown paper full of dried flowers and leaves for the use of the school in studying botany—this is what we would like to see a living, accomplished fact in every country school. If trees, shrubs, and flowers, were oftener planted in school grounds we should more often see permanent relations between parents, children, and teachers.

CONCERNING CORRESPONDENCE.

We believe in correspondence, and we have been highly favored thus far, and hope our friends will continue the good work. Send us fresh, practical notes. Tell us what has happened in the horticultural line, what fruits or flowers, or trees are favorites, and why. Ask questions, and criticise—here we pause and hesitate. Some, but not all, of our correspondents can be trusted with the privilege of criticising other men's work.

There are a few principles concerning correspondence, which, although from time immemorial a part of the unwritten law of the editorial craft, have been seldom formulated. Briefly expressed, they are these:

(1) The correspondence department

is not for the airing of a man's private grievances; it is for the sake of information, and good-will, and better acquaintanceship.

(2) If a man has written an article with which you do not agree, the proper thing to do is to write another from your own standpoint, giving reasons, and stating what you conceive to be facts, backing them up by all the authorities within your reach. Indulge in no personalities, but treat your opponent with irrepressible politeness. Remember that our soil and climate vary so much in California that your statements may seem as absurd from his standpoint as his do from yours.

(3) So long as a discussion deals with facts and practical experience it is valuable. The moment it becomes a mere personal, childish series of retaliatory remarks, it is a drag to the paper, and only interesting to the parties immediately concerned. Besides people never know when to stop. There has to be a last word, they think, and so the end of it is that the unhappy and worried editor steps in and cuts the Gordian knot with his pen point by writing—"Further discussion on this subject is deemed undesirable." Readers of the weekly agricultural journals east and west, will call to mind that fateful legend, marking the disappearance of some incubus-like discussion.

Let no one misunderstand us. Truthful and modest discussions are often the most agreeable part of a journal. We hope to stir up our farmers, nurserymen, orchardists, botanists, and floriculturists to an interchange of opinions, and friendly criticisms. But, we give fair warning, the moment any discussion becomes uncourteous, or fails to interest the general reader, that moment we shall bring it to an untimely termination.

OUR FRONTISPIECE.

BRUNSWIGIA JOSEPHINÆ. — Very large bulb, sending up a stalk from two to eight feet in height, which is surmounted by an immense umbel, measuring three feet in diameter, and containing fifty or sixty flowers of three inches in width.

The color is a bright crimson interior, and purplish orange exterior.

The species *Amaryllis* contains many most magnificent varieties: some pure white, some rosy pink, some yellow, some blue, and some brilliant carmine striped with white. Among the finest and newest of these last is the "Mrs. Rawson."

ATTEND TO THE BORERS.

About the first of April go into your peach orchards with a hand-hoe and a sheaf of rye or wheat straw (the straw should be straight), and scrape the earth away from around the butt of the tree down to where the large roots branch off. Place a thin covering of straw round the trunk of the tree, with the ends of the straw resting on the ground. Secure the straw to the trunk of the tree by three or four turns of common cotton wrapping cord, such as grocers use for tying up packages. Adjust the straw evenly round the trunk of the tree, so that no part of the bark will be exposed, and offer a place of attack for the insects. Be especially careful in this respect about covering the crown of the tree. When the straw is secured properly in place, draw the earth back to the tree, covering the ends of the straw, and thus securing it in place.

An inch thickness of straw will be sufficient till the next April. Apple trees may be protected in the same way. This is the best, cheapest, and

simplest means to prevent the depredations of the borer that we have ever tried or heard of.

A cylinder of coarse tarred paper placed loosely round each tree will answer a similar purpose, but straw and a cotton cord costs next to nothing, and is the best of the two.

This preventive is too simple and easy to attract learned doctors, who love to approach their object by circumlocution and a procession. But if unassuming farmers and orchardists wish to save their trees with the least trouble and expense, they will adopt our recommendation. We have practiced it frequently in the worst peach-borer afflicted region in the country, and have never known it to fail in a single instance, while trees left unprotected in the same orchard were invariably eaten up, literally. — *Kansas Farmer*.

THE CALIFORNIA HORTICULTURIST AND FLORAL MAGAZINE for May shows how work and skill and enthusiasm will tell. It is evidently prospering under its present auspices, and has a very hopeful outlook. This number contains eleven original articles, and shows some new names and younger blood. The editor evidently keeps himself busy, and has the faculty, also—very telling in this world—of getting others at work. When we can all do this, the world will come toward its gardening millennium, if not of religion. So far we are having a wofully cold and windy season, and it requires rare skill and devotion to make a garden flourish in an exposed situation, even with the aid furnished by this magazine. — *The Pacific*.

NEXT year about 50,000 more shad will be planted in the Sacramento River. Those previously planted are rapidly increasing.

Editorial Notes.

THAT FEAST OF ROSES.—We received Mrs. Winton's article on the recent exhibition of roses in Santa Barbara with a feeling of sorrowful delight. We were not there, much to our grief. But what a splendid affair it must have been! This most delightful article gives us an opportunity to say that articles peculiarly Californian, showing what we can do here, and telling about our plants and gardens, our forests and mountains, are the joy of our existence. Such articles, too, are read with the deepest interest wherever our monthly wanders—in Australia, Mexico, Turkey, New Zealand, Japan, London, Paris. It is original work, and bright horticultural correspondence which we most need, and we thank our many friends for their continual favors.

There is another thing to be said. A Rose Carnival, in Santa Barbara, first of the cities on this coast? That lovely sheltered valley which slopes so gently to the calm Pacific must be called the realm of roses for the present. Let other places look to their laurels!

After all, what an innocent and happy rivalry is this! Let us have rose exhibitions, and vie with Old England, and most delicately quarrel with each other. Let us have our rosarians of note, our stately committees, our seedlings to be named. A land of roses is a land of music, mirth, and song, a land of strong men and fair maids, a land of most bewitching moods and of pure enthusiasms. Let us so toil that our young State, with all its fervid volcanic impulses for good and for evil, shall hourly grow nearer to the simplicities of nature. Let us plant roses, love them, and exhibit them. Think of a monthly Feast of Roses!

MARIPOSA LILY vs. PRETTY-GRASS.—Popular flowers must have popular names, and our beautiful *Calochortus* is no exception. The word *Mariposa*, from the Spanish for butterfly, having reference to the wing-like and delicately marbled petals, is somewhat picturesque. But we notice that Thos. Meehan merely translates the generic term—*Kalos*, pretty, and *chortus*, grass—which is all that could be desired.

WILL THE JAPAN PERSIMMON SUCCEED IN NEW YORK?—A correspondent of the *Gardener's Monthly* asks—"Whether the Japan Persimmon will stand the climate of western New York?" and we notice that this is a mooted question from various sources. Our first impression was against the universal hardness of this tree; but we have had so strong evidence, both in the way of letters from Japan and personal statements from men who have seen the fruit growing there, that we now feel sure the Japan Persimmon will grow wherever the peach does. Our readers will remember Mr. Jarmain's statements on this point in the April number.

INNISFALLEN ROSES.—Some weeks ago we were agreeably surprised by the receipt of a box from the Innisfallen greenhouses, Springfield, Ohio. Now this box was one of those secret-keeping affairs which generous people send out, and much astonished recipients open with anxious haste. Therein there were named roses and geraniums, which we potted off at once, and they are in the best of spirits after their long journey. We have received many plants by mail, but none were ever packed in better order, and few nearly so well. They arrived in the most perfect condition.

IS IT CARNIVOROUS?—The discussion on Mr. Henderson's recent experiments with the *Dionæa Muscipula* still continues. In truth it forms a most entertaining and instructive portion of the *Gardener's Monthly*. Mr. Henderson's original experiment was honestly and carefully conducted, and the story was told as fairly. That he aroused criticism was not to be wondered at; but he has set many persons at work in the same line of investigation, and nothing but good can come from it. One correspondent takes the view that all plants are more or less carnivorous, absorbing nitrogenous matter through the pores or stomata of the leaves. This, we apprehend, is a step in the right direction.

THE ABRONIA UMBELLATA.—A correspondent of the *Horticultural Record*, London, recommends our beautiful sea-shore trailer, the *Abronia Umbellata*, for general purposes, and especially for parterre gardening. In this we concur. We have admired the *Abronia*, and spoken of it with enthusiasm, lo! these many years. As we have seen it on the beach, where it is called the sand-verbena, covering a mound of sand to the very summit with rosy pink umbels of flowers, there is hardly a more charming plant. There is also a waxy yellow species, *A. arenaria*. *Abronias*, once well established in a corner of the garden, are almost certain to come up every year from self-sown seed, and so perpetuate themselves.

H. B. ELLWANGER ON HARDY ROSES.—From a paper read by Mr. Ellwanger before the Western New York Horticultural Society we obtain some interesting points. The subject was, "The Best Hardy Roses for general cultivation, and how to grow them." It is treated in that easy, graceful way which marks the veteran writer. He recommends the pegging down system for roses planted in beds on the lawn. On this system, roses on their own roots are desirable, and the long shoots are bent over and fastened to the ground. Every year the old shoots are cut away, and the new ones are laid down in their places. The great advantage of this system, it is stated, is in the immense quantity of flowers produced. If we expect a generous yield of flowers, there must be a generous application of manure. This is best done in autumn. Cow manure is preferable on the whole, though all kinds are excellent.

"If we desire," says Mr. Ellwanger, "to form a list of good hardy roses, we must find roses which excel in these particulars: Beauty of color, beauty of form, fragrance, profusion and continuity of bloom, vigor and healthfulness of growth." Those are the points for any one to remember as they are walking in their rose garden, and weighing the conflicting claims of new varieties.

LIME JUICE.—The best quality of lime juice for antiscorbutic purposes is produced in the Island of Montserrat, West Indies, where three hundred acres of orchard ground are devoted to this culture, the number of lime trees being about one hundred and twenty thousand.—*Popular Science Monthly*.

TREATMENT OF LAWNS.—After our unusually late and favorable spring, the grass is in the finest of condition everywhere, and, it must likewise be added, so are the weeds, if they were allowed to get a start. There is nothing more charming than a well-kept lawn; but it requires a good deal of care to have one in our climate, for we have no summer showers, and the atmosphere is so dry that constant attention is needed. Keep clipping often, and rake off the grass at once. Lawn clippings are first-rate for mulching and to cover the seed beds. A great deal of the success of a lawn depends on the way the ground was prepared when the lawn was first made. Deep digging and a good deal of manure are two of the requisites. An evenly graded surface is also essential. Our best California seedsmen are beginning to sell a very satisfactory mixture of different grasses. Kentucky blue grass is much used. By the end of this month the grass will somewhat lessen its growth, and it need not be clipped quite so often as before.

LUMBER SUPPLIES.—Of the twenty-six States, comprising the New England, Middle, Western, and Northwestern, to the Rocky Mountains, only four are now able to furnish lumber supplies beyond their own requirements, viz: Maine, Michigan, Minnesota, and Wisconsin. But Maine is almost stripped of her pine forests, and lumbermen have to go to the head-waters of rivers in search of spruce. Michigan, Wisconsin, and Minnesota, can not furnish supplies of white pine more than five or six years longer. In the light of such facts, it behooves the people of this country to seriously consider the subject of reforestation, and the protection of young timber trees.—*Popular Science Monthly*.

DELPHINIUM FORMOSUM.—We wish each one of our readers could have a glimpse of a bed of this fine perennial larkspur which is growing quietly in our garden. There is absolutely no other flower known to us which will quite take its place. The enormous spikes have sometimes been two feet long, and a dozen or more have been in bloom at the same time. The color is so pleasing an ultramarine blue,

and the entire style of the flower so brilliant, that, old a favorite as it is, we never expect to see it forgotten. Indeed, *D. Formosum* seems perfectly well adapted to our climate, living from year to year, and finally growing four or five feet high. Its one fault is that the wind breaks off the stems if not tied before the spike opens. Its one danger is from those insidious underground toilers, the gophers.

A LOVELY CATALOGUE.—Four times in the circuit of the year our friend, Mr. L. B. Case, Richmond, Ind., sends out his *Botanical Index*. It is a bright idea, well carried out. Something new there is always, and something of general interest. The typographical appearance is in every way pleasing. The April issue takes up the *Pontederia*, being the fifth paper on the so-called Water Lilies. It is a good article, well worked up in an honest, painstaking way from original sources, and therefore deserves much credit. We are glad to see that Mr. E. Y. Teas, of Dunreith, Ind., has contributed an article on the new Chinese and Japanese Pears, which are of so much value for cooking.

TOO BAD! IS IT NOT?—We saw lately in one of the city papers a statement that visitors at the Golden Gate Park had been guilty of breaking the plants. The same thing has occurred at the University. In some cases, visitors have even been known to take a plant out of the pot in which it was growing, and carry it off bodily. It is a disgrace that such things should occur.

STARCH PRODUCING PLANTS.—But few persons have put themselves to the trouble of ascertaining how great is the amount of various kinds of starch used in the United States for laundry and manufacturing purposes, aside from their use for food; therefore they are not prepared for a just conception of the importance of this industry being fostered in our State. I look upon it as being next to if not of equal importance with our fruit product.

To properly comprehend the value of Cassava, it may be well to contrast the product of an acre with that of the Irish potato. To make the comparison a fair one, I take the highest estimates at the North, of 300 bushels per acre (it is more likely to be half of this); this, at sixty pounds per bushel, will be 18,000 pounds. The highest estimate of starch product per bushel is six pounds, which gives as a result 1,800 pounds of starch. Cassava planted four by four will give 2,722 hills per acre. Making a low estimate of product, ten pounds per hill, the crop will be 27,220 pounds of root. By our rough domestic mode of manufacture we obtain one pound of starch from five of root, which gives the grand result of 5,444 pounds of starch per acre, being three times that of the potato, and which can, no doubt, be increased by the use of proper machinery for grating and washing the root.

The Cassava grows to the height of from eight to

ten feet. The roots contain the starch, and are from two to four inches in diameter, and from two to four feet in length. Often on rich soil, four or five of these roots are taken from one hill. I have seen a root that weighed twenty pounds. Pieces of the top from four to ten inches are used for planting, covering them about three inches deep. In October the roots will be ripe enough to begin to use for making starch. There are two kinds in use in this country, the bitter and the sweet. The former contains prussic acid, and requires, to get rid of this poison, a different mode of preparation from the sweet, which is the kind cultivated in this section, and is said to contain the largest proportion of starch. In manufacturing, the rind, which is of a light pink color, must be taken off, if you wish a light colored article of starch; the remainder is grated fine, mixed with clear water, worked over, and agitated to get out all the starch. This water is poured off, allowed to settle, and the starch washed a number of times, then placed upon a cloth and put where it will dry rapidly, to prevent souring. The resulting starch is heavy, brilliant, and well suited for laundry purposes, the dressing of goods, or for food. If desired, it can be made into Tapioca, which is done by drying in pans, at a temperature of about 140° F., and stirring until the particles are agglutinated. In this form it will keep sweet and free from mustiness. The refuse pulp and rind is eaten readily by horses and hogs, and possesses considerable fattening properties.

Arrow-root, from which the famed Bermuda farina is prepared, is grown successfully upon our pine lands, and should be planted in rows three feet apart and eighteen inches in the drill. A small piece of the root, containing one or more eyes, is used for seed and covered two inches deep; the after culture sufficient to keep down the grass and weeds. The ground becomes completely filled with the roots, which are ripe enough for use in October. Though I have raised a considerable amount of the root, I am unable to say what will be the product of an acre. The common mode of preparing it for family use, is to wash the roots, rubbing off with the hands a thin membranous coat that partly covers it; they are then placed in a trough and beaten with a wooden maul until reduced to a fine pulp, which is put into clear water, and the starch which settles is repeatedly washed until the water passes off clear; it is then rapidly dried. By this simple process I have prepared a farina fully equaling the Bermuda.—*Florida Dispatch*. [We have selected this article thinking that the cassava and arrow-root might perhaps be grown with profit in some parts of California. Has it ever been tried?—EDITOR.]

MAGNOLIA HALLEANA.—A writer in the *American Agriculturist* claims that the beautiful Japanese Magnolia named by Parsons, of Flushing, Magnolia Halleana, is really an old species named Magnolia Stellata. But the English *Garden* accepts it as Halleana.

Pomological Notes.

THE CUTHBERT RASPBERRY.—In the *American Agriculturist* for March we find an article upon the "Cuthbert Raspberry," in which the editor speaks of it as follows: "Several years ago, a gentleman called upon us, introduced by a friend well known in the horticultural world, with a very generous basket of raspberries. The fruit was remarkable for its brilliant color and its great firmness, which, together with its fair size, impressed us most favorably." We also give Mr. E. P. Roe's description of the same fruit: "For years, one of the chief needs in fruit culture, has been a raspberry that combined a sufficient number of good qualities to make it profitable and acceptable throughout the regions in which raspberries are grown. New kinds are constantly introduced, but nothing hitherto has appeared to 'fill the entire bill.' I was in hopes the 'Pride of the Hudson' would be the successful candidate, but time, that tests all things, proves it must be content with standing high up among the choice varieties having foreign blood. For the table, I ask nothing better in all localities where the Franconia or Antwerp varieties succeed. But we need a raspberry that will grow North and South, East and West, on light soils and heavy, moist and dry, and at the same time produce a profitable crop of large, firm, bright-colored, good-flavored berries. This is asking an immense deal of one variety. Does the 'Cuthbert' meet this demand? I can not yet say with certainty that it does, but from all I can learn, it comes nearer doing so than any other kind yet introduced." The *Agriculturist* also gives a statement from the gentleman who introduced this raspberry, as follows: "I have been in possession of the 'Cuthbert' for the past seven or eight years, was the first to introduce it to the public, and my experience with it has been that the vines are very hardy, the most so of any raspberry of which I have any knowledge. It is a good bearer, keeps well, and when in good order may be shipped anywhere that a blackberry can be sent, and arrive in good condition. I can truly say I know of no weak point in it. This raspberry originated near New York City, in the garden of a gentleman by the name of Cuthbert, and by him given to a well known horticulturist for more complete trial. Mr. Charles Downing, who has seen the Cuthbert growing and fruiting near Newburgh, says of it: 'I consider it the most promising market raspberry before the public so far as yet tested. The fruit is large and very firm, and the plants are exceedingly productive and vigorous growers.'"

WOOD ASHES FOR PEACH TREES.—Unfortunately the disease known as yellows, and the enemy known as the peach-borer, make the peach in many localities one of the most difficult of fruits to grow. For several years I have used wood ashes about my peach trees with marked success in obviating these

two evils. About a peck of fresh ashes is applied each spring and fall about the stem of the tree in a little conical mound, that previously so placed being spread upon the soil when a new application is made. The conical mound prevents the attack of the borer, and the dressing of ashes upon the soil stimulates the vigor of the tree, so that it is enabled to resist the disease. But this must be accompanied by regular shortening-in of the last year's growth, and by thinning of the fruit, to prevent overbearing, which exhausts the tree and leaves it an easy prey to disease. A case of yellows occasionally, though rarely, appears in my orchard, as must be expected where a disease is constitutional, but by this treatment peaches are now successfully grown where their cultivation was for a long time abandoned.—JAMES WOOD, in *Country Gentleman*.

Ashes may not be suitable in all soils, but it is well to experiment.

WHAT THE BIRDS ACCOMPLISH.—The swallow, swift, and nighthawk are the guardians of the atmosphere. They check the increase of insects that otherwise would overload it. Woodpeckers, creepers, and chickadees are the guardians of the trunks of trees. Warblers and fly-catchers protect the foliage. Blackbirds, crows, thrushes, and larks protect the surface of the soil. Snipe and woodcocks protect the soil under the surface. Each tribe has its respective duties to perform in the economy of nature; and it is an undoubted fact that if the birds were all swept off the face of the earth man could not live upon it; vegetation would wither and die; insects would become so numerous that no living thing could withstand their attacks.

The wholesale destruction occasioned by grasshoppers, which have lately devastated the West, is undoubtedly caused by the thinning of the birds, such as grouse, prairie hens, etc., which feed upon them. The great and inestimable service done to the farmer, gardener, and florist by the birds is only becoming known by sad experience. Spare the birds and save your fruit; the little corn and fruit taken by them is more than compensated by the quantities of noxious insects they destroy. The long persecuted crow has been found, by actual experience, to do more good by the vast quantities of grubs and insects he devours than the harm he does in the few grains of corn he pulls up. He is one of the farmer's best friends.—*New York Home Journal*.

FRUIT IN AUSTRALIA.—A correspondent of the *Queenslander* (Brisbane), describing the Rockhampton Flower and Fruit Show (notice that even the colonies of England say "flower and fruit show," where we say "floral and promological exhibition"), says: "Grapes, Peaches, and Oranges were especially deficient. The Mango, however, was well represented, and some old growers were rather astonished to see so many varieties, the fruit ranging from the small or strawberry kind, weighing six

or seven ounces, to a larger specimen weighing nearly twenty ounces. This delicious fruit grows to perfection in the neighborhood of Rockhampton, requiring very little cultivation; and it is to be hoped that the late show will give a fillip to its cultivation. It is only necessary that the taste for it should be acquired to insure a large sale in the southern markets, and doubtless the time is not far distant when mango farms will be as plentiful in this market as orangeries. Some fine specimens of the jack fruit were also shown, although not for competition, from the Botanical Gardens. There were some nice looking Apples, grown by Mr. J. W. Face; but, from the general scarcity of this fruit at the successive shows, one can not help fancying that its cultivation in this climate is up-hill work, and rarely successful. One of the most prominent exhibits of this division was that by Mr. T. Wright, Cawarral, of a bunch of Cavendish Bananas that weighed nearly one hundred pounds."

DWARFING TREES.—The method of dwarfing trees followed by the Chinese is peculiar. An ordinary tree is selected, and around a suitable branch the gardener binds a bag of mould, which he is careful to keep moist, until at length the branch strikes root into the mould. It is then cut from the parent stem and planted to form the trunk of the dwarf that soon bears leaves and flowers and fruit. There are many flowers and plants, the product of temperate climes, which would be appreciated in China, and in that vast country, with its teeming millions, may be discerned a promising field for the enterprise of British seedsmen. So says the *Gardener's Magazine*, but California is nearer to China than England, and her seedsmen ought to be enterprising enough to secure the trade.

New & Desirable Plants.

[We shall glean from our exchanges and correspondence, notes on plants either new, or of promise in our climate. Our nurserymen are invited to send notes on any interesting plants received.]

CLETHRA ALNIFOLIA.—This is not a new shrub, but has lately attracted attention on account of its value as a forage plant for bees. It is a hardy flowering shrub, and the honey made from it is said to be very pure and of fine flavor.

ARROW-ROOT.—I have found arrow-root (*maranta arundinacea*) a profitable plant both for starch and also for feeding animals. I raise it chiefly for feeding my horse. I estimated the crop of 1877 and found the product eight tons to the acre. I obtained one pound of starch from eight pounds of the root. It was grown upon high pine land only partly fertilized. No doubt five pounds of root will produce one pound of starch if all is saved in the manufacture. I find it more easy to raise than the sweet potato. If

left in the ground till March the membrane is rotted, so that it easily washes off, leaving the root white and clean.—N. W., in *Florida Dispatch*.

CHOCOLATE.—This fruit, though old in commerce, is new to California. The possibility of introducing it is worth considering.

The family of trees (*Theobroma*) to which the chocolate belongs is a very large one in South America. Many varieties wild in the forests or cultivated in Indian provision grounds produce delicious fruits. The beans, however, embedded in the fruity pulp of these, are of no use. In some parts and at certain seasons the air in the forests is laden with the spicy aroma from the large bunches of deep maroon-colored blossoms which stud the tall slender trunk of one of these species. The Brazilian settlers along the margins of the Lower Amazon plant their "Cacoás" without any shade, except for the seed beds. On the other hand, in Venezuela, they plant beneath certain rapidly growing and lofty shade trees, which go by the name of the "Madre de Cacáo," or the mother of the Cacáo. This would, from the example of nature, appear to be the better plan, and is further strengthened by the high reputation of the chocolate of Venezuela, known under the name of the capital Province of Carácas. * * * In its wild state the chocolate grows on river lands often slightly flooded. The chocolate grows naturally in such localities, yet some of the finest I have seen in South America grow on tablelands, or hill slopes and valleys. * * * A first walk through the shady aisles of a chocolate plantation produces an effect not soon forgotten. The trees branch immediately from the ground, and the melon-like pods spring direct from the bark. In point of profit I know it to compare very favorably with coffee, for although the trees being much larger, require very wide planting (say fifteen feet apart), the yield is very large. The cultivation necessary is the slightest of any plantation I know of. Coffee requires constant attention. Advantage to the climate of the country, where they are extensively grown is obvious, for whereas other cultivation of hot climates—such as sugar, indigo, etc.—tend to strip the face of the land of timber, the chocolate plantations spread abroad dense rain-inviting woods, and draw down the passing clouds. This is no slight consideration in any country. From the rich fruity pulp in which the beans lie bedded a delicious and wholesome drink is easily made in any quantity. This is another consideration to dwellers in hot climates. Owing to the prejudice of the markets, coffee requires expensive manipulation, and a stream of water is in consequence much needed on a coffee plantation. On the other hand, chocolate is bagged up for market after little more than simple washing and drying.—H. A. WICKHAM, in *London Gardener's Monthly*.

SHORTIA GALACIFOLIA.—This highly interesting and rarest of North American plants is now in blos-

som in one of the greenhouses at the Botanic Garden, Cambridge, Mass., where it is an object of great attraction. It is a sweet little plant, not showy by any means, but a welcome garden alpine. It is about four inches high, with galax-like leaves, both as regards form and brown color, and pure white bell-flowers, borne singly on stems three inches high.

In 1778 Michaux discovered a *Pyrola*-like plant in the mountains of North Carolina, and secured the specimen, which was in fruit, but not in flower, for his herbarium. Beyond that specimen, not another vestige of the plant, dead or alive, was known to exist till last year (1878), when it was re-discovered growing on a hillside in North Carolina, and specimens were then sent to the garden here. Long before its re-discovery it was earnestly but unsuccessfully hunted for by Dr. Asa Gray and others; and even now so much importance is attached to the long sought mountaineer, that a special company of botanists from here are to visit it in its native wilds as soon as its flowers open in the spring.

A nearly allied species, namely, *Shortia uniflora* (*Schizocodon uniflorus*), was discovered not long ago, in Japan.

WILLIAM FALCONER.

The imperfect specimen of this plant preserved by Michaux was first found in examining the herbarium of that author, by Dr. Gray in 1839, and, notwithstanding its imperfection and the fact that no other plant of the kind could be found after diligent search, Dr. G. ventured to designate and describe it in 1842 as a new genus.—*Country Gentleman*.

Reviews and Exchanges.

[All books on subjects in any way connected with horticulture will be reviewed in this department. Publishers are requested to state the price of each book sent.]

THE BEST HARDY ROSES FOR GENERAL CULTIVATION, AND HOW TO GROW THEM. A paper read before the Western New York Horticultural Society by Henry B. Ellwanger.

A good thing for every one interested in roses to read. Mr. Ellwanger, with a very wide knowledge of different varieties of roses, seems to judge among them with real discrimination.

DEPARTMENT OF AGRICULTURE. Special Report, No. 2. "The Silkworm;" being a brief Manual of Instructions for the production of Silk.

We confess we know almost nothing of the subject of which this manual treats; but as it is prepared by Chas. V. Riley, it is, no doubt, worthy of the utmost confidence, and it seems to give very plain and full directions for the care of worms, etc. One very suggestive paragraph we quote: "There are hundreds of thousands of families in the United States to-day who would be most willing to add a few dollars to their annual income by giving light and easy employment for a few months of each year to the more aged, to the young, and especially to the

women of the family who may have no other means of profitably employing their time."

THE NEW BEE-KEEPER'S TEXT BOOK. By A. J. King, editor of *The Bee-keeper's Magazine*. A. J. King & Co., New York.

Here is a book of 229 pages which has evidently found a needed want to supply, for it has reached its twenty-fourth edition, and is revised from the old text-book.

Mr. King, we understand, taught school successfully in this State for some years, and lived near Temescal, in Alameda County; but the charms of bee-keeping drew him from the school-room, and he has devoted so much attention to the subject since that he now ranks as one of the leading authorities. This is a simple, interesting, well-arranged, and well-edited manual on the subject.

One of the most readable chapters is that one relating to honey plants. Sumac and other shrubs are mentioned. Among perennial plants the clovers, borage, catnip, etc.; and among annuals, the mignonette and others.

We may add in this connection, that another new forage plant for bees is offered by some Eastern nurserymen, and has been recommended by the *American Bee Journal*, Chicago. This plant is the *Clethra Alnifolia*, a hardy flowering shrub, easily grown, and ornamental. It is increased from suckers and cuttings. It blooms on plants from one to eight feet high, and has been widely disseminated for use as a forage plant for bees. If any of our California apirians have tested the *Clethra* we should be glad to hear their experience.

RHYMES OF SCIENCE: Wise and Otherwise. With illustrations. New York Industrial Publication Company, 1879.

A pretty little book, containing twenty-four rhymes, all more or less scientific; some from well-known authors, some picked up in corners of newspapers; some pleasing, some dull. Of course, Holmes's "De Saury," and Bret Harte's "Pliocene Skull" and "Society upon the Stanislaus," are fairly the best, with the distinct air of being written by somebody who knew his business that makes a real artist's work bloom out amid amateur poetry like a rose amid green leaves. "The Philosophic Chicken;" "A Tail of Long Ago," with its serio-comic tone—

"And the cries of God's first creatures were a universal wail,
Of fierce and brutal conflict when this ganoid curled his tail;"

"A Geological Poem;" and the appalling "Song of the Screw," before which any one but the mathematical sharp must quail—these are decidedly clever and bright. The rest are the lightest of the light, and really do not show much *raison d'être*, much less reason for being preserved in permanent form.

We have received a "Pamphlet on the Catalpa Tree," by E. E. Barney, Dayton, Ohio. Every one who reads the Eastern agricultural papers is aware

that there has been a great deal said about the Catalpa lately. One question of interest was in regard to the varieties. Dr. Warden gives these as follows: 1. Catalpa Bignonioides, native of United States. 2. Catalpa longissima, West Indies. 3. Catalpa punctata, West Indies. 4. Catalpa hirsuta, Brazil. 5. Catalpa Bungei, China. 6. Catalpa Kämpferi, Japan. It seems to be settled that there are two varieties of the American species. In regard to the durability of the Catalpa wood, many anecdotes are told. Among others of a log used for a foot-bridge a hundred years, and Catalpa gate posts sound after being set 190 years.

Dr. R. W. Piper's report on "Diseased Milk and the Flesh of Animals used for Human Food." From Billings, Harbourn & Co., No. 3 Montgomery Street, San Francisco.

A careful reading of this little pamphlet is recommended to all dwellers in cities, and especially to parents. It makes one's heart ache to read how children suffer in consequence of being fed upon impure milk.

THE FLORAL CALIFORNIAN.

This bright quarterly, published by Mr. Stratton at Petaluma, fills its own place in its own way, and is full of gardening hints and enthusiasm for flowers. We notice that the editor desires the addresses of plant collectors on the Pacific Coast.

A good plan is that of the *Rural New Yorker* to give up a number every now and then to one special subject—now strawberries, now corn, etc. It makes it possible to the specialist to find what he wants all together in convenient shape, instead of scattered about, he knows not where.

The *Florida Dispatch* is an earnest little paper, and represents an interesting section of which we should hear but little but for the *Dispatch*.

The *Horticultural Record* is another pleasant English magazine. The whole-souled interest in floral matters that breathes from these English journals makes us look forward longingly till we, too, may be a nation of gardeners.

We have received also a treatise on Silk Culture in America by L. S. Crozier, Williamsburg, Franklin County, Kansas. This gentleman offers to send a book on silk culture for 50 cents. In the treatise before us he dwells at length upon the idea advanced in the paragraph quoted above—viz., that sericulture promises employment to many now idle hands.

The *California Farmer* publishes interesting letters from Dr. Stillman, now traveling in Egypt. This old stand-by of agriculture in California is now in Vol. XLIX.

Catalogues, etc., Received.

[We shall acknowledge the receipt of all Seed or Plant Catalogues, Pamphlets, Reports of Horticultural Societies, Agricultural Reports and similar documents.]

Still the catalogues come. We are half way around the bright circle of the year, but some of the publishers, who seem to have forgotten us earlier, are trying to make amends.

Hovey, of Boston, sends his illustrated catalogue of new and rare plants; also his guide and seed catalogue for 1879. D. M. Ferry, Detroit, has a seed annual, which this season contains two colored plates.

From Louis Van Houtte, Ghent, Belgium, we have received a package containing no less than six catalogues of value and interest. The subjects to which these neat pamphlets are devoted may be briefly given. (1) Bulbs and other flower roots. (2) Hardy herbaceous and alpine plants, roses and fruit trees. (3) Azaleas, Camellias, Rhododendrons, Magnolias, etc. (4) Stove and greenhouse plants, etc. (5) Gesneriaceous plants, this last embracing gloxinias, of which they offer a very large list, the anemones, caladiums, tuberous rooted begonias, etc. It is the most copious catalogue we have ever received.

Chas. T. Starr's catalogue of new and beautiful plants for 1879. Chester & Co., Avondale, Penn.

Transactions of the Massachusetts Horticultural Society for the year 1878, Part II. This is a handsome pamphlet of 260 pages. We learn from it that this society has reached its semi-centennial. Robert Manning, Boston, Mass., Secretary.

Shakers' Catalogue of Flower and Vegetable Seeds. Charles Sizer, Mount Lebanon, New York. This is an attractive catalogue; and we believe the Shakers' seeds have an excellent reputation. We are also in receipt of a catalogue from D. C. Brainard, of the same place, which also claims to represent the Shakers. Which is the "Simon pure," or whether they both represent the Shakers, we are unable to say.

Joseph T. Phillips & Son, West Grove, Chester County, Pa. We notice in this catalogue a plate of the *Aristolochia Siphon*, or Dutchman's pipe. The form cultivated at the East differs materially from our native California species, but both are more curious than beautiful. This firm offers, besides, a great variety of plants.

Cayuga Lake Nurseries. Farley, Anderson & Co., Union Springs, Cayuga County, N. Y. Trade circular; also, folded with it, a circular offering choice varieties of poultry.

The Reading Nursery. Jacob W. Manning, Reading, Mass. We see that Mr. Manning gives his portrait on his price-list. This is a feature we have never noticed in catalogues before. Probably it is intended to make his customers feel that they are acquainted with him, and thereby increase their con-

fidence in him. Perhaps this is a good feature for all handsome nurserymen to adopt.

Ellwanger & Barry's List of Plants. Mount Hope Nurseries, Rochester, N. Y. This partial catalogue, from an old and reliable house, offers several attractive novelties, giving prominent place to the improved *Clematis* for bedding, *Clematis Jackmanni*. From the same house we have a Descriptive Catalogue of Select Roses, which is about the best rose catalogue we have seen.

Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, and Small Fruits. William H. Moon, Glenwood Nurseries, Morrisville, Bucks County, Penn. This is a very neat catalogue, and offers a great variety.

Wm. E. Bowditch. Descriptive Catalogue of Seeds, Plants, and Bulbs. 645 Warren Street, Boston, Mass. This is a very large and full list of flower and vegetable seeds. We see seeds of scarlet *maurandia* offered. This color is a new one to us, and if they would come true from seed would be desirable.

Alfred Bridgeman, 876 Broadway, N. Y. Catalogue of Seeds, Garden Tools, and Horticultural Books. Illustrated and very well arranged. We are pleased with this catalogue.

List of No. 1 and No. 2 June Budded Peach Trees on hand January 20, 1879. Randolph Peters, Wilmington, Del.

St. Joseph Valley Nurseries. Price-list for Spring and Fall. Elwood Peak & Son, South Bend, Ind. A convenient little catalogue of small fruits, chiefly strawberries and raspberries.

List of Native and Exotic Ferns in the Greenhouses and Grounds of J. Warren Merrill, Cambridge. A very unique and interesting catalogue to lovers of ferns. It is a list of ferns in Mr. Merrill's private grounds, embracing between 600 and 700 varieties. Whatever varieties he has in duplicate he is desirous of exchanging (either living or dried specimens), and offers for sale whatever he has in sufficient abundance. Persons desiring to exchange or purchase may address Avery B. Gilbert, gardener, Hancock Street, near Broadway, Cambridgeport, Mass.

Orange County Seeds. Cornish & Griffin's Descriptive Catalogue. 38 Water Street, Newburgh, Orange County, N. Y. Chiefly vegetable and field seeds, though with a very considerable list of flower seeds. The descriptions of new varieties are fuller than usual, and form an interesting feature.

Rochester Commercial Nurseries. William S. Little, Rochester, N. Y. Trade circular.

Special Wholesale Trade-list of Plants, etc. L. B. Case, Richmond, Ind.

Hans Nielson's Catalogue of Plants, 1879. St. Joseph, Miss. Roses a specialty.

The Literary News. A monthly journal of current literature. Published by Billings, Harbourn & Co., booksellers and stationers, No. 3 Montgomery Street, San Francisco.

E. BUTTERICK & CO.'S**Celebrated Paper Patterns.**

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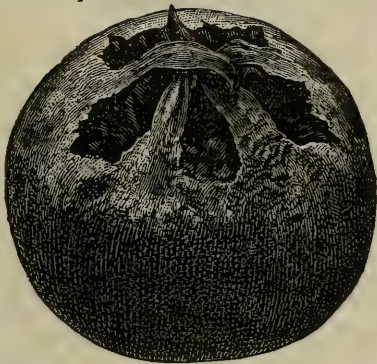


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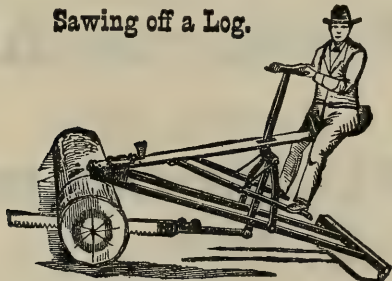
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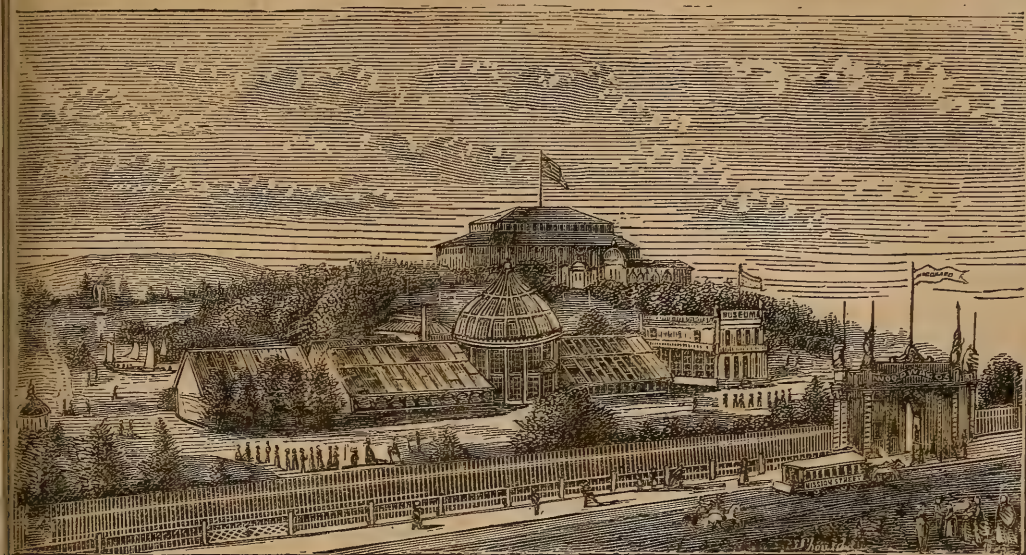
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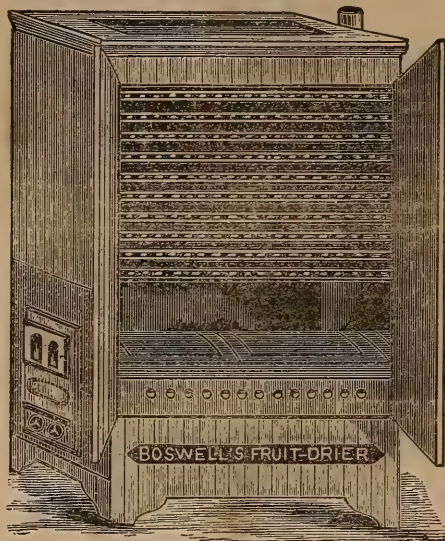
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Vol. IX.

JULY, 1879.

No. 7.

THE

California Horticulturist

AND

Floral Magazine.

"Men come to build stately sooner than to garden finely, as if gardening were the greater perfection."
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CHARLES H. SHINN, - - EDITOR.

POST OFFICE ADDRESS—NILES, CAL.

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California Horticulturist

AND

FLORAL MAGAZINE.

VOL. IX.

SAN FRANCISCO, JULY, 1879.

No. 7.

Contributed Articles.

CONSERVATORY POSSIBILITIES.

By L. H. T.

"A greenhouse is the place to grow plants—a conservatory, to show them," is what the wise ones say; and of many plants this is certainly true. It is sad to see the contrary ways of Azaleas and Japonicas, Daphnes and Stephanotis, persistently refusing to bloom; hanging their heads in continued dejection; dropping day by day their jaundiced leaves, and hardly making an effort to replace them; all because their home is not entirely devoted to them, but is only a big bay window, may be, in somebody's parlor, or a little L inclosed in glass, and with door always open into some flower lover's library.

But all the more admiration do the Begonias and Ferns receive, who try their best to please us, no matter how adverse the circumstances: we are always grateful to the pretty, striped, Zebrinas and the delicately beautiful Lycopodiums that cover the bare spots and drape so gracefully the sides of pots and beds. And to stately Bananas and Palms that do well for us, no matter if it is not a greenhouse, our devotion knows no bounds. I know one

Banana whose aspirations were so lofty that he quite forgot that his home was a tiny conservatory, instead of the tropical island where he was born. His mistress went away for a few days; when she returned, her Banana, rivaling Jack's famous bean-stalk, had pierced the roof, unfurling his latest leaf like a flag of triumph, but causing, alas! sad havoc in his journey through the glass. It made her heart ache to cut him down after such a brave exploit, but the winter and its storms were approaching, and the roof must be repaired.

So the "wise ones" can not mean that *some* things will not grow as well in a conservatory as in the most perfectly arranged greenhouse. There is the Cypraedium, a branch of the Egyptian Papyrus family, (the familiar name is umbrella grass) that will almost surpass the Banana in fast growing; and if one can place it beside a little fountain, over which it can bend and admire its curious but beautiful self, and where its always thirsty roots will be sure to receive many extra waterings, it will soon show you its full appreciation of its happy circumstances.

But to all of us who have the "show" and not the "grow" places, Begonias and Ferns are the main dependence.

It is always with them we make our triumphs, and both are so willing to do well, even though we may be obliged to almost entirely deprive them of sunlight. Some of the largest and finest Begonias I have ever seen, were so placed that the sun never shone directly upon them; their leaves were never touched by water, yet their glossiness and depth of rich color were wonderful. Unusually large, too, and lovely were the many spikes of bloom in their season. One Begonia lover of whom I know, in her enthusiasm for this most enjoyable plant, has now, gathered from far and wide, forty different varieties.

But of Ferns, from the dainty foreign maiden-hair, to our rough polypodies that we can bring home from any country ramble, what an unending source of pleasure they are! Perhaps one reason is, we don't expect so much of them. We never look for flowers (their family name, Cryptogamia, hidden flowers, forbids that) so we are never disappointed. All we wish is the pleasant, restful green, and the graceful form with which our eye may comfort itself, and these they always give. How they fill up all the interstices! allow themselves to be cramped for room as nothing else will! neither, with few exceptions, will they bear a lasting grudge, if, some busy day, we do neglect them a wee bit, and fail to bestow upon them their customary bath. And think of the variety we have to choose from! In his "Species Filicum," Sir W. J. Hooper gives us two thousand five hundred species, and other botanists many more. Some of the choicest varieties are natives of our own California woods, and will bear transplanting to our little conservatories with entire equanimity.

We are the envied of the English fern gatherers for our Gymnogramma, in which genus is included the well known

"Golden Back." Also for our lovely Finger Fern, *adiantum pedatum*, which will repay us for many an exploring tour up a shady cañon with a rough climb, may be, along the banks of a tumbling little stream. And here, too, in all its glory grows the "Lady Fern," of which the poet has so lovingly written:

"But not by burn, in wood, or dale
Grows anything so fair
As the pluming crests of emerald pale
That waves in the wind, or soughs in the gale,
Of the Lady Fern, when the sunbeams turn
To gold her delicate hair."

And so, though our experience is not enough to rank us among the least of the "wise ones," it has proved to us many times over this much: that if one will cease longing after impossibles, and be content with many pleasant possibles, one will not know the difference, as a source of enjoyment, between a conservatory and a greenhouse.

A HOME FOR ROSES.

By GUSTAF EISNER, Fresno, Cal.

The reading of "A Rose Carnival in Santa Barbara" afforded me a great delight, being myself a lover of roses. I do not say that we accept the challenge of Santa Barbara, as I do not think we grow here more than two hundred and fifty varieties, and we accordingly would be far behind in number; but we are quite proud of what we have, and what is better yet, we enjoy them splendidly. Our town of Fresno is also only five years old, and the first garden was begun four years ago. Everybody in Fresno who can afford to have a garden has one, and little or big, you will there find plenty of roses. The pioneer gardens belong to Mrs. Dr. Leach, Mr. Ferguson, editor of one of our local papers, Mrs. Dr. Rowell, and Mrs. O. F. Mrs. Leach's garden is perhaps

the largest, both in extent and in number of varieties grown. Of roses she grows more than one hundred kinds. Her plants are large and her roses very fine. Among her finest I consider Mad. Jules Margottin, Black Prince, Devoniensis, Malmaison, Royal Tea, and Bougere, all of which do exceedingly well.

In Mr. Ferguson's garden we find over fifty varieties, many of exceeding beauty, such as Mad. Riveire, Paul Neron, Isabella Gray, and a host of others. This garden is full of Orange trees, Bananas, Pomegranates, and other semi-tropical trees, and presents in the spring of the year a sight of rare beauty.

The garden of Mrs. Rowell is very tastefully arranged. Climbing vines around every pillar of the veranda, evergreens, camelias and roses all contribute to make it one of the most tasteful and beautiful places in Fresno. Among roses I admire Maria Sisley, Saffrano, John Popper, Paul Neron, and numerous other kinds.

The garden of Mrs. O. F. is unique and very characteristic. In a real grove of Italian Cypress and Acacias in front of the dwelling house Mrs. F. cultivates some of the most beautiful and perfect roses met with anywhere. The number of her varieties is very limited, but those she has grow to the utmost perfection. Her Marechal Niel is unsurpassed in size, and her numerous bushes of General Jacqueminot, covered with dark bluish flowers, are unequaled in beauty. Here, if anywhere, we can see what can be effected with taste and care.

Lastly, in my own garden, I grow about one hundred and forty varieties of roses, several of which however are young, and have not yet blossomed. The following twelve roses I consider the finest I have. Hybrid Perpetuals:

Antoine Mouton, La France, both unsurpassed in form and color. Chestnut Hybrid (hybrid tea)—Reine des Violettes, Empress of India, and Francois Michelin, all as near perfection as I can wish. Among teas the finest are Perle des Jardines, Rubens (splendid), Aline Sisley, Souvenir de Madame Pernet, Marie Von Houtte, and Regalia. But I suppose as my roses are coming into bloom I will have to change my views and give the place of honor to some other varieties.

Some varieties stand the heat of the sun better than others. Among those I consider Appoline, Pink Daily, Clare Carnot, and Reine des Massifs, perhaps also Niphetos, to be the best. When we had it 116° Fahrenheit in the shade, they stood it splendidly in the full blaze of the sun, when at the same time other varieties such as Mad. Margottin, Bon Silene and Marie Guillot were burnt to crisps. But my letter is getting too long and I must cut short. A few words of how I treat the plants. I flood my garden every ten days during the hottest months of the year, and sprinkle the leaves two or three times a week. When some roses do not open well I give them plenty of wood ashes and sometimes a little lime. When the ground is sandy a shovel full of pulverized clay will in a short time produce a wonderful growth. Such a treatment is especially recommended for Marechal Niel, which rose in sandy soil will hardly grow at all. In the middle of April our roses are in full blossom, but even now, in the beginning of June, I can pick a few hundred rosebuds every day. And now, "lovers of roses," one and all, let us hear what varieties you have, and which you like the best, and let us all show that we in California have "homes for roses."

FRESNO, June 7, 1879.

BENEFICIAL AND INJURIOUS INSECTS.

By WALTER S. YATES, Centreville, Cal.

My object in writing the following, is to call the attention of horticulturists and others to a subject which though not entirely neglected still does not receive the attention it merits. In a recent number of the *HORTICULTURIST* I noticed the following: "There is much to be learned in regard to the methods by which destructive insects may be kept in check. One of the most satisfactory of these methods is that of finding some other insect that preys upon the pest." The article from which the above is taken, states that the scale insect which infests the orange trees of Florida, has an enemy in the form of a lady-bug, which is marked by a single red spot on each elytrum. In this vicinity, there is found a lady-bug (*Chilocorus bivulnerus*), which is probably of the same species, and should be protected by the horticulturist. In some cases injurious insects are imported from foreign countries without their enemies; as, for instance, there has been imported here from Australia, on the gum tree, a species of bark louse which is causing much trouble. A good remedy for bark lice is to wash the infested plants with strong soap-suds. Every one has seen the common lady-bug, which is of various shades of yellow, and through orange to red in color. This insect is supposed by many to be herbiferous and consequently injurious to the horticulturist. It is, however, carnivorous, and does good service in destroying insects injurious to plants, and should be protected. There is also found in this locality a green insect spotted with black (*Diabrotica soror*), which belongs to a different family of coleoptera, but is generally called a lady-bug. It is about the size of the

common lady-bug, but ovoid in shape. This insect not only does great injury to plants and trees, but also destroys large quantities of fruit. A remedy for this troublesome pest is to sprinkle Paris Green on the plants early in the morning. As Paris Green is a rank poison, it should be used with caution.

The writer would be pleased to receive specimens of Beetles which may be found destroying vegetation, or preying upon the herbiferous species, together with notes as to their habits, date of capture, the names of the plants they infest, or the insects they destroy.

NATIVE PLANTS FOR OUR GARDENS.

By J. B. HICKMAN, San Juan, Cal.

Some years ago, in passing through Gilroy, I noticed a mass of scarlet bloom against a back ground of shrubbery, and wondered what it was; on going closer, I was surprised to recognize *Zauschneria* Cal. The plant had been transplanted, and under garden treatment had become a mass of flowers about four feet each way. Instead of a few straggling stems with few flowers and fewer leaves, struggling up through ferns and brush on some dry oak knoll, here was a magnificent shrub-like plant, in full bright sunshine. As it blooms in the dry season, it can grow and bloom without irrigation, but it will amply repay such attention, if care be taken not to get the roots too wet.

Two other plants that do well in dry locations are *Sedum spathnifolium*, and *Mesembryanthemum aquilaterale*. The former has numerous rosettes of green and red leaves and clusters of yellow flowers very like those of *Echeveria*. The *Mesembryanthemum*, commonly known as beach apple, spreads rapidly, covering the ground with its three-cornered green leaves and rosy-purple fringed seed vessels, which are

tempting enough for some people to eat. Two of our Abronias seem to be favorites among Eastern gardeners, and probably would be at home, if more generally known.

THE LEGEND OF THE MARGUERITE.

By E. C. SANFORD, Oakland, Cal.

The young prince of the Northland, Ethelbert, had called together his sturdy followers and was about to seek his fortune in the fabled land to the westward. Each of his ships bore as commander a young noble, chosen from his father's court. Among them was Volsen, the idol of the realm. And it was his ship, that at sunset, gliding down a sea of glory, and flaunting its raven banner in the face of the sinking sun, carried away the most of blessings and left behind the greatest sorrow. But every man must win his glory for himself, and they who loved him best would not keep him from that conflict with danger, which alone would build him to the stature of a hero.

So each Norseman went to his home, and time wore on till there was scarce a thought of the young warrior away in the West-land. But not so with fair Marguerite, who but so short a time before had promised herself to him.

As the weary days dragged on, her heart wandered with him to the westward. She alone sees his ship as it labors through storms, or shoots along in the moonlight. With him she reaches that fabulous shore and sees the glories of that wondrous land. And now she pictures him turning his bark toward home, and looking up, half expects to see his boat grounding upon the beach below.

At last the time approaches for his return, and she sits for hours hoping to catch the first glimmer of his sail. But weeks lengthen to months, and one

by one her friends give up all hope. They tell her he has found some new rich country, and is living in plenty, forgetting now his home, or he lies dead on some distant shore. But she will not, she can not, believe them, and when their hope has long been dead, hers is strong and still holds her to her weary vigil. Night after night from the rocks she gazes on the slow moving stars, thinking perhaps he is now, by those same constellations, shaping his course to her, and day after day she scans the horizon, and sees in every tiny cloud his incoming sail. But human strength must fail, and human hope give way. At last weary with hope deferred, she laid her face upon her knees, and drawing her snow-white cloak about her, wept a little softly to herself.

The pitying moon hid for a moment her bright face, and when she looked again, the princess was not there, but in her place she saw a lovely flower. In it she recognized the *golden hair*, encircled by the *snowy robe*. And now though scattered through many lands, she still is sitting on shore waiting for her long-expected lover, and we call her the "Marguerite."

[It may not be known to all our readers that the French frequently call Daisies "Marguerites."—EDITOR.]

HOME INFLUENCES.

By JOHN TAYLOR, Mount Pleasant, Cal.

Tasteful and refining influences elevate the physical, moral, and spiritual nature of man. Especially is this the case through the cultivation of flowers, and the general practice of home music as an evening entertainment. Music is one of home's cultivators, elevating and refining in its tendency; while it occupies time which might be otherwise

more than wasted. The architecture of home has also its influence. An ever-present thing of beauty in an elegant cottage home attracts the dwellers to its comfortable appointments, so as to keep them away from gilded dens of vice, the owners of which lavish gold upon outward and inside decorations, so as to captivate the unwary and those living in houses of filth and utter want of taste or pleasure for eye and sense. Hence the necessity of spending time and means upon the outward precincts of home. Let the inside be made cozy by brightening up the useful and ornamental, not forgetting the common civilities of life. Politeness and cleanliness, comfort and intelligence, go hand in hand in making and creating a true home. What is better adapted to secure our model home than the refining influence of a cultured mind, surrounded by the beautiful in art and nature?

How true it is that we can measure the mind of the owner by the visible appearance of his home and surroundings. A flower-enshrined porch shows the beauty-loving mind. The art of having all the buildings constructed to please the eye, and to combine the beautiful with the useful, is an art that requires to be more universally cultivated, and will produce a rich harvest of happiness to the possessor, and a race of citizens to become the bulwark of Republican institutions. What we require to attain such grand results is a higher standard of architecture, a more general development of the power of music, a universal cultivation of flowers, making fragrant the chambers adorned by pictures of art; while the library is not forgotten, with its works of useful knowledge. There is no home, however humble, but what can be made inviting to the stranger as well as to the inmates.

A nation's civilization, whether in the present or past, is measured by its architectural eminence. It is with families as with nations. Farmers and horticulturists, while attending to field or orchard, should not neglect to cultivate the surroundings of home and that immortal part, the mind, which is destined to bloom in the gardens of heaven. To the mother especially I would say, cultivate the love of flowers and music; it will sweeten life, and sweeten the sourest disposition. If that principle were more universally carried out, fewer wrecks would be found tramping the earth as a living rebuke to the civilizing influences of the Christian religion.

WHY NOT SPELL NAMES CORRECTLY?

By GUSTAF EISEN, Fresno, Cal.

In your valuable monthly for May I find an article on the well-known and beautiful *Camelia*. Not only in the *HORTICULTURIST*, but also in most of the American and foreign catalogues at hand, I find the all too common misspelling of *Camellia*, and I think it is time that we call this beautiful plant by its right name.

In the middle of the eighteenth century the *Camelia* was first brought to Europe by the Jesuit father Cameli, and the plant was named in his honor *Camelia*. There is therefore no reason whatever why we should call this plant *Camellia*.

The other mistake is to call the pepper tree *Schinus Mollis*. Its Indian name is *Molle*, which has no reference to the Latin word *mollis*, soft. Its name is *Schinus molle*, or *Molle*.

I could mention a hundred names generally found misspelled in the catalogues of the florists, but the above will suffice. If the florist does not know how to correct his proof-sheets,

let him send them to some competent botanist for correction. There is certainly no reason why we should not call our beloved plants by their right names, when we oftentimes take pains to ascertain the correct names of persons with whom we perhaps never will have anything to do. Let some florist or nurseryman make the beginning, and issue his catalogues correctly spelled, not only in regard to the Latin, but also to the foreign names; and I am sure others will take the advice, and we will have a general change for the better.

[Webster spells the word *Camellia*; but there is certainly some force in the argument that, being derived from *Cameli*, it needs but one *l*.—EDITOR.]

WILL THE CINCHONA TREE THRIVE IN CALIFORNIA?

By HERBERT O. DORR, San Francisco.

It is now over thirty years since the introduction of this tree into the United States was considered at Washington. An Act was passed, and the late Dr. McCormick, formerly at the head of the Medical Department of the Pacific, of the United States Army, was one appointed to carry out its provisions. Nothing was ever done—as being before the acquisition of California, there appeared no fitting field was open in which to try the experiment.

Quinine, a product of the Cinchona tree, is one of the most valuable drugs used in pharmacy, and has been steadily advancing in price within the last few years. Used throughout the world, it has a standard value, somewhat as the precious metals have. One great reason of its increased value is owing to the fact that the Spanish American races who live in the South American States, traversed by the Andes, which is the habitat of the Cinchona tree, have

in wanton stupidity cut down and destroyed the tree to obtain its bark. The price of quinine has advanced within about eight years from five shillings to about twenty shillings sterling per ounce. And there is every reason to suppose it will still increase in value, as the only two nations having sufficient discernment to provide for this contingency—the English in India, and the Dutch in Java—have under their control the only large plantations of this noble tree.

The English plantations of the Cinchona tree, commenced about 1860, have been successfully cultivated for some number of years, and are situated in the Neilgherry Hills, in the Presidency of Madras, Southern India, at 5,000 to 7,450 feet above the level of the sea. These positions unite many of the peculiar characteristics of the native region of the Cinchona tree in the Andes, not only as regards the elevation and temperature, but also, one of the most important considerations, atmospheric moisture, an excess of which for a great portion of the year seems essential to the perfect growth of these trees. Yet, though an excess of atmospheric moisture is necessary, they do not prosper in a wet soil, as the best Cinchona, or Peruvian, barks are obtained from dry slopes on mountain sides, and a certain amount of dry weather is necessary to the ripening of the capsules, or seed vessels. In regard to temperature, they thrive in the Andes, where it ranges from about sixty degrees Fahrenheit during the day, and falls to about thirty-five degrees at night.

In 1868, the number of Cinchona trees in the India plantations exceeded 2,500,000; and the bark is now obtained from these trees and delivered in the London market for con-

sumption. A remarkable fact has been ascertained in regard to the transplantation of these trees, that the bark has not decreased in its yield of the alkaloids, or quinine, but on the other hand, has even yielded better. It has also been found by the English, that by protecting the trunks of the trees from the rays of the sun by coverings of moss, the yield of quinine may even be doubled or trebled.

As there are many varieties of these trees growing in varied localities and climates, some of which are useless in their commercial value, it has been found a necessity to ascertain positively the ones of the species especially adapted to use in different parts of the world. In this the English have succeeded much better in India than the Dutch in Java, as the latter have planted and cultivated varieties of the tree which have proved worthless.

Among the varieties cultivated in India successfully, the following have proved the most valuable among many. According to botanical nomenclature firstly—the species called *C. succirubra* (red juiced) has been found the most valuable. Another species is called *Bonplandiana*; of this there were in 1867, 750,000 trees growing. The bark of this variety is as rich in quinine, etc., as barks from South America, and it will grow at an elevation of even 8,350 feet above level of the sea. Under favorable circumstances, trees in India have attained in three years a height of fifteen feet, and a diameter of fifteen inches.

One of the most valuable species of *Cinchona* trees to transplant (perhaps in California) is called *C. Pitayensis*. This grows in a cold climate, on lofty mountain ridges, near Popayan, where the temperature varies from thirty to sixty degrees Fahrenheit; this is easily

cultivated, and of rapid growth. Some value of the *Cinchona* tree may be estimated, if we consider that a tree producing one hundred pounds of the best bark, may give a product in the alkaloids, quinine, etc., of about two hundred dollars commercial value.

It has been found by the English in their plantations that it is not necessary to cut the trees down to obtain the bark, but that it may be stripped in certain portions from top to bottom of the trunk, vertically, and covering the decorticated part with moss, the tree not only thrives, but the bark is renewed at intervals of time, and may again be taken. This is the mode of obtaining the bark from cork trees in Spain.

The tree may now be said to have been with perfect success introduced into British India, from its northern to its southern boundaries, as also into the Island of Jamaica, in the West Indies. The Dutch have introduced it into the East Indies. The French have attempted its culture in the Isle of Bourbon and Gaudaloupe, as also in Algiers. The Brazilians have cultivated it with success near Rio Janeiro, and it is known to have been introduced in the Azores, and is growing well. It has also been experimentally planted in the Hawaiian Islands, and grows there, as it will also in the high extensive islands of the South Pacific groups. Thus far, it has been proved that it will become acclimatized in many parts of the world wherever its natural condition of climate, temperature, etc., are to be obtained.

Precisely what localities on the coast of California will prove best adapted to its culture remains yet to be ascertained; but that a species may be found which will thrive and yield the bark valuable in commerce is not a matter of reason-

able doubt. There are localities in the Coast Range exposed to heavy fogs many months in the year among the mountains, where the temperature and moisture correspond with the known requirements of this tree, and one or more of the species before mentioned would thrive there. There may also be places found among the foothills of the Sierra Nevadas where they may be planted and grown. It is necessary to consider they are not trees of tropical climates, properly speaking as regards temperature, for the best bark yielding trees do not grow below a level of four thousand feet above the sea, and are found in the most bleak and desolate places. The tree does not grow in forests by itself, but is scattered singly or in numbers among forests of other species of trees, and generally in very inaccessible places.

When we consider degrees of latitude in relation to climate and temperature, and the consequent vegetable life that may exist on the Pacific Coast of the North American Continent, it becomes necessary to take into view the known fact that the great isothermal lines which cross the continent are, in crossing the Rocky Mountains, deflected far to the north many degrees. The isothermal line of Boston, Mass., passes near Sitka, Alaska, in about 58° north latitude. The tropical fruits of the Southern States, as of Florida, latitude 30° north, may in California be cultivated in 40° north latitude. The winters in Puget Sound at our northern boundary line, in temperature, are far milder and temperate than those of Washington or Richmond, both in about ten degrees further south latitude. Thus it is apparent we can not form any conclusions by comparing climates of the Atlantic and Pacific sea boards, as they so widely differ.

Peruvian bark as a remedial drug has been known about two hundred and fifty years, but its chemical principles, which constitute its true value, have only been known about fifty years; and the knowledge of transplanting and cultivating the trees successfully, only known less than twenty years. Dr. Weddell first sent seeds to France, which were in 1847 planted in the Jardin des Plants, and were successfully cultivated.

There are three or more available sources from which we can obtain the seeds and plants of the Cinchona tree for cultivation in California. The first and nearest point to obtain them from is by way of Guayaquil, the great sea-port depot of Ecuador, or from Peru. The English first obtained their seeds and plants from the above sources, but only after much expense, and after great hardships endured by the explorers; partly owing to the nature of the country, and also from the jealousy of the native authorities. Some species may also be obtained from the Dutch government at the Island of Java, from whom the English obtained plants and seeds, which were successfully cultivated. We can also bring them from the Presidency of Madras, where the best species can be had from the English plantations. Java is nearer our coast by steam navigation than Madras, but the relative expense, trouble and distance would not offer material differences between the two places, except a longer voyage.

This great enterprise of cultivating the Cinchona tree in California is not of necessity an expensive one, if rightly conducted. It may be done by private individuals, by the United States Government, or by State authority. It is probably expecting too much to suppose any private individual of sufficient

means would undertake this enterprise, as profits from it could not be expected under from about ten to twenty years. To be accomplished to the greatest advantage it should be done by the United States, by an appropriation for expenses giving use of lands, etc., passed by the legislative bodies. As this would not involve any great amount, it might also be done by the State of California, but it is necessary proper laws should be enacted to obtain lands, and protect the trees and plantations.

To estimate the cost of this enterprise, we must calculate the expenses of an individual in traveling to and obtaining the plants and seeds from the most available place or locality, and of his return; also the necessary expenses of planting and taking care of them afterwards until success is attained. It is quite possible, and even probable, that the sum of five thousand dollars carefully expended by a competent person, would introduce the culture of this tree upon the Pacific Coast of California. This certainly would not leave any profit to the person who was employed, nor would it offer much opportunity for fraud.

NOTES FROM SACRAMENTO AND SOLANO.

By CHARLES H. SHINN.

Leaving San Joaquin, we crossed the red wheat-lands which lie along the Cosumnes River, and turning west, reached the yellow, lazy tide of the Sacramento. There were lonely dwellings, treeless and forlorn, scattered at wide intervals over the level plains; there were dusty roads leading in all imaginable directions; villages in various stages of growth, or of stagnation, or of decay, came slowly into sight as far-off clusters of brown walls and black roofs. A village in a state of decay is

a heart-sickening sight. The signs of many failures are visible in rotting fences, and shattered wrecks of unrepaired houses, and unkempt children, wrapt in the constant solace of mud pies. In every county of California similar hopeless, ancient, unpleasant, monotonous villages may be found. We ride through them with a sense of despair. Blossoms there are none, unless springtime, kinder than men, scatters a few dandelions by the roadside; trees there are none, unless long ago the winds and rains nursed a single oak in hopeful, prophetic piety, to shelter the coming school-house. This is not meant to be a sweeping denunciation of California villages. We know there are clustering homes on quiet streams, or hid in deep ravines, or folded about with billowy fields of grain, and shaded with orchards and the familiar trees of yore—the maples, ashes, lindens, beeches, elms, and a thousand others—but wherever, in any section, large ranches predominate, and the population are mainly renters, having no permanent interest or, indeed, power, there is, in the very nature of things, a “let well enough alone” philosophy which makes endlessly mournful villages and homes.

Along the Sacramento River there are the loveliest of orchards, loaded heavily, and proving very profitable. A narrow strip of alluvial soil, extending from the river inland a space of a mile or so, has been found to be adapted to fruit culture. It is well leveed, and may be considered reasonably safe. The road winds along on the top of the levee, and one looks down on a continually changing scene. First a peach orchard, each tree set on a slight mound to facilitate drainage; then pear or apple trees, interlocking their stubby branches; upright cherries next, beginning to color in the sun; and acres

of apricots, fairly massed on the boughs. White cottages and trim gardens appear now and then. There are a few large and costly residences. Back of the orchards are wastes of unreclaimed tule, trampled over by cattle and wild hogs, and narrow sloughs gleam in the distance.

We stand on the narrow wharf at Courtland, one of the pretty villages, and wait for the Sacramento mail-boat. It is an afternoon of melted quivering sun on orchard-tops and vibrant river, and great, lazy marshes far beyond. Monte Diablo rises up, a single blue peak dividing the long wave of snow-white cloud blown eastward from the Golden Gate, and seeming at last to touch the unutterable Sierras. Elsewhere there is neither cloud nor hazy shadow, but the color of the sky is embodied rest. Over the moss-covered fence near the wharf, tall spires of wild oats touch gently, and there is a flash of yellow where a swinging oriole makes music for his own delight. By-and-by, far up the river, a flock of smoke appears, and grows larger; men drive up with boxes of fruit, and pile them on the wharf; red-shirted Italian fishermen tie their boats, and unload the day's catch of salmon, for this is a famous fishing point; the idlers gather, the brisk postmaster locks his leather bags, and a hush of expectancy prevails. At last there is a trembling surge, a rushing tumultuous sound, and the steamer lies panting beside the wharf.

The river widens, receiving the floods of San Joaquin, and the waters of many wide sloughs. We pass island after island, some of them leveed, and under cultivation, others lying unused, and covered with tules, or with low marsh grass. We are now in the midst of a fairly immense territory of land which will eventually be reclaimed and made

fit for homes and farms. The eye wearies with the sense of distance. These green-girdled islands seem to float as upon a summer sea. Flocks of waterfowl rise from before the steamer's advancing prow, and sink into calmer expanses beyond. A few fisher boats swing lazily at anchor, and we pass barges loaded with grain, towed by the narrow seemingly top-heavy stern-wheel steamers. Otherwise there is often little sign of life for miles until we reach the town of Rio Vista in Solano County.

Solano County has quite irregular outlines, and a very large frontage on navigable waters. The area of the county is 672,000 acres, two-thirds of which is arable. The present population is not far from 20,000. As for the earlier history of Solano, its Indian rancharia at Rockville, its early settlers, the Wolfskills, Vaca, and others—is not all this written in that veracious chronicle, the County Atlas? Once, and not more than thirty-five years ago, the whole wide plain and the untrodden valleys were one expanse of wild oats, higher than a man's head. Here deer and antelope roamed, and there were grizzlies in the adjacent hills. The earliest settlers found a new land, a place for pleasant and prosperous homes, and many of them still remain, keeping the farms they at first chose. The best land in the county is around its edges, the geographical centre being poor soil. The warmer valleys are largely used for fruit growing.

In the quiet springtime afternoon, we rode through the streets of Rio Vista, looking northward towards the heart of the county, over the wide Solano plains. At first there were low hills—rounded, treeless—covered completely with green and growing wheat. Looking back, Rio Vista, from a distance a beautiful place, is set, cup-like, in the hollow of

the fairest hills, beside the beating river-pulses, and beneath our pleasant skies of May. The farms we pass are mostly quite large, it being a fancy of the Californian farmer that six or seven hundred acres are needed to make a decent farm. This is possibly true under the present system of exclusive wheat raising, where farmers buy even their butter, eggs, vegetables, and meat, but our wisest hope and future lies in the direction of a multitude of well tilled small farms, where there is something for each member of the family to do on each day of the year, and something to add to the income at each season.

The rounded Montezuma hills, at what time named no man remembereth, cover a territory of perhaps fifteen miles in extent east and west, and are mainly devoted to wheat. Further west, between Nourse's Slough and Suisun Slough, the Potrero hills are of a somewhat similar character. Here, as also over the great central plain of the country, the winds blow almost incessantly, for this territory is in the direct path of the atmospheric currents which enter the Golden Gate, and fill the two central valleys of the Sacramento and the San Joaquin. It is a good place for wind-mills, although there are not many to be seen. In some parts of the Solano plains the winds begin every afternoon, and blow all night with most fervent persistency. A few beautiful homes may be found in this region, a few gardens full of home-like and old-fashioned flowers, but, for the most part, the farm houses are desolate, lonesome sheds, built on the treeless, wind-shaken waste, with hard, cold, barren surroundings.

The western and northern parts of the county are mountainous, and many fertile valleys extend far into the fastnesses of these chaparral-covered heights. In Green Valley are a succes-

sion of fine water-falls in a rocky glen of unspoiled wildness. Within a distance of a mile are three small cataracts of from six to twelve feet, one fall of considerably more than a hundred feet, and one of about sixty feet. The sides of the glen are strangely worn, and covered with a luxuriant vegetation. When we visited it the *Calycanthus*, here found in dense thickets, was in full bloom. There are not now such a profusion of wild flowers as we found in San Joaquin. Several species of *Godetia*, Wild Pea, the inevitable small *Compositæ*, and pink roses in various shades, are the predominant features. On a ledge of the wild and almost perpendicular cliff to which I had with infinite labor climbed, there was a clump of *Lilium Humboldtii* almost ready to bloom, and some *Echeverias* had wedged their fleshy roots into the fissures of the rocks.

Some of the finest orchards for early fruit are in Pleasant Valley. We pass up the Vaca Valley, finding many large and fruitful orchards and vineyards, and, after crossing a low ridge, are in Pleasant Valley, which seems almost a continuation of Vaca. Some notes on the varieties of fruits planted will be found elsewhere. It is a valley of much natural and acquired beauty. Clumps of willow; ridges of silvery wild oats, yellow with *Calochortuses*; a winding stream, crossed often by picturesque bridges; high banks clothed with luxuriant vines, white-blossomed and red-fruited; orchards wonderfully fresh and dark, healthy green; old houses, with glimpses of rose-gardens—that is a part of the picture. Now, we were begged not to mention names, because, we suppose, these Pleasant Valley folks are living in such an Earthly Paradise that, should the outside world find it out, there would be no end of pilgrim-

ages and sighs at the gates of this rightly named valley, this lovely nook, this winding orchard-river which is hid in the mountain's stormy heart, and guarded so well by faithful crags, and lonely pine-clad peaks. At least we think that was the reason, and so we most cordially forgive our friends' smiling objections to having their names printed. It is enough to say that we found, in Pleasant Valley, a community on the whole busy, successful, and intelligent—a neighborly, old-fashioned, hospitable, quick-witted, Californian community. The intellectual atmosphere is something more than a fiction; there is a flavor of New Englandism, and the *Atlantic Monthly*, and Howells. A Literary Club, formed by the young folks of the valley, holds regular weekly meetings; books and papers of the better class abound, the living questions of the day are freely discussed, and the beginnings of a strong and steady intellectual growth have been fairly made.

No! we shall not mention names. There is no land for sale here, and our home-searching readers would only, by much correspondence, worry those luckless orchardists. Let it be thought a myth, a Spain-built castle, a lovely fraud, the dream of a dreamer, a brilliant illusion, or whatever else is vague, cloudy, and uncertain. But we have seen Pleasant Valley, and have hidden pleasant memories of a fair and shining land where some day, in the fullness of time, poets will weave their mystic songs, and artists paint, and sculptors carve their dumb aspirations and midnight revealings.

When the fig trees, now no larger than one's wrist, become as our sturdy river-bottom sycamores, upholding whole acres of foliage; when the vintages of these rocky slopes have a world-wide reputation, and are hid in the cellars of

kings, and poured out at international rejoicings; when canned and dried fruits from this and similar valleys control the markets of Europe, and the East—then the mountains of California will prove our fairest heritage, and will support a teeming population. The future of Northern and Central California lies largely in the direction of fruits, fresh dried and canned, wines, raisins, and similar products. The warmer valleys and the southern counties will doubtless extend the culture of the Olive, Fig, Orange, Lemon, Citron, and similar fruits. The reclaimed tule and marshes will raise rice, and other grains, and also vegetables. We shall make cotton culture, and perhaps even sugar cane, a success in some favorable localities. We must keep our mountain peaks, and otherwise worthless ridges, well clothed with forests, under due protection of law, so that our mountain springs shall still rise, and our fair rivers shall still flow.

Thus, and thus only, the children of our wide and but half-explored realm can really know peace and prosperity. We have multifarious resources; let us also have multifarious industries to develop them. It is not best, it is not even possible, that we continue mere wheat producers. Cheaper lands, as yet untilled, in Russia, Australia, South Africa, New Zealand, will undersell us, and break up our vast wheat fields into smaller tracts. We must learn that twenty acres of good land will support a family. There are mountain farms of less size than that, where every one is comfortable and happy. Not on wheat culture, of course. Twenty acres of wheat is comparatively nothing. But twenty acres in orchard, vineyard, small fruits and vegetables is about as secure a living as anything in this world of uncertainties.

We know a place of exactly thirteen acres which has averaged one thousand dollars clear cash profit annually, for the past ten years, and the family have had all the fruit and vegetables they could use besides. It was hard work at first. Everything worth doing usually is, and to found a home for happy children, strong manhood, and peaceful old age is the highest privilege and duty of civilized men. If there are only enough true homes, where loyal hearts are nurtured, we shall pass safely through each political storm, and meet undismayed the age's pressing and anxious problems. If only there be glad and pure homes—let the mothers of the land take heed.

Farm and Orchard.

FARM NOTES FOR JULY.

This is, in most countries, the month of harvesting, of headers, reapers, threshers, busy teams, and bearded men, toiling in the golden grain, and happy fields whose fruitfulness means so much. It is food for the hungry, clothes for the naked, school privileges for the children—whatever you choose to have it—this blessed grain which flows so steadily into the brown sacks.

Do not wait too long before threshing.

In many places the squirrels eat up a large percentage if left in the field. This is a heavy tax, which to prevent must be the farmer's aim. Then, also, grain becomes so brittle that there is much loss on that score. If stacked it must be allowed to "sweat off" first. Engage a threshing machine early, so that there can be no delay through inability to find one when needed.

On Hillside Farms a header wagon, first made by Mr. Upham, of Collinsville, is desirable. It is wider than the

usual wagon, and is drawn by four horses hitched abreast, two being on each side of the pole. This form of header wagon is more easily turned around, and is less liable to upset on the hillside. It is not patented.

Keep good natured. Harvest work is undoubtedly hard. Every one on the place must be up at daybreak often, and it is one continued strain until nightfall or after. Then, besides, this comes in the hottest part of the season. But worry is the worst of companions. The men will work harder for a cheerful master than for a grumbler. Take the lead yourself, and if a lad whose ambition is greater than his strength gives out, relieve him somewhat and let his muscles become used to their task. This would seem too trivial a thing to mention, were it not that the world is made up of just such little things.

Save the Straw.—This is of vital importance. We are liable to have a drought over half our State in any season; and feed is thus made scarce and high. It is merely common prudence to provide against the future. Look out ahead. Stack the straw, and it will be worth its cost for feed in any season, while dry years will doubly prove the wise man's forethought. Do not burn a pound. Save it, and keep on saving it.

In blacksmith work, especially if some miles from a shop, try to have extra reaper knives, and other parts of harvesting machinery which is liable to get out of order, so that delays are less liable to occur. A machine in enforced idleness for an hour, or a day, is just so much the loser. Breakages are unprofitable.

Orchard work is, in the warmer portions of Central California, the gathering of peaches, early plums, apples, and pears. July is, under these cir-

cumstances, a busy month. Boxes are to be made by nailing together the already sawed "shooks" bought from the factories in San Francisco, Sacramento, or Red Bluffs; fruit is to be picked, by Chinese or by boys, with baskets, wire hooks, and ladders; it has to be packed with much professional pride by some one who is an expert of long standing; it must be nailed up, loaded into a great wagon, mayhap at three o'clock in the morning, and hauled to the nearest station or landing. It is not quite so dusty nor exhaustive work as that of the grain farmer, but it is fully as continuous. Fruit must be well assorted, making uniform sizes, and keeping different kinds separate. The packing must be scientific. Close, solid, and even packing will tell on the price of the fruit in the long run. Near market, fresh leaves may be used to pack with; if at a greater distance use paper, or clean, fine oats hay. The mountain peaches come in boxes which hold only two layers, well protected against bruising; the river peaches are shipped in baskets; the coast peaches are usually put into larger boxes holding three or four layers. The best peaches pay for the best care and the neatest packages. Arrangements should be made to dry all the surplus fruit. This is an important, but too often neglected matter. Fruit dried in the open air must be heated in an oven before being put away. "Pour boiling water over figs," said a fig grower lately. This also cleans them if they were dried on the ground as is usual in the thermal belt. Where fogs are prevalent, or near the coast, the orchardists, having finished their cherries, are not yet very busy again. About the last of this month their peaches will begin, and after that there will not be much rest until winter. Now, then, repair old boxes, and make new ones.

The ways of the Commission Merchant are worth watching. We presume that commission men are, as a class, quite as honest as any other set of merchants. But the opportunities of a dishonest commission man are, in our humble opinion, innumerable. Matters being so much in his hands, it is best to watch market reports, compare prices with your neighbor, trust your man honorably, while you are sending to him, and if things go wrong, change at once and absolutely. We knew an orchardist who took a new commission man because the former one dealt in stocks. Line of reasoning, this: "deals in stocks, liable to get cinched, might cinch me to get even. Adios." Than which there might be worse reasoning.

Correspondence.

[The editor of the CALIFORNIA HORTICULTURIST cordially invites all persons interested in any branch of horticulture to send practical questions and notes of their own successes and failures. A brief, unadorned statement of events in one little garden may often prove of universal interest. Short notes from busy people, all over the Coast, will make this Department fresh and valuable.]

HOW SHALL I TREAT TUBEROSES.

EDITOR HORTICULTURIST — Sir: Last year and the year before, I tried to raise some Tuberoses, but I failed badly each time. The first season the bulbs I planted did not come up at all; they seemed to have rotted off, and when I dug down, having lost patience entirely, they could not be found. Perhaps, though, the gophers took them.

The next year I planted later in the season, for perhaps, I thought, the gophers had eaten up the first lot, and I chose the warmest place I could find in the garden, mixing sand with the ordinary soil. They came up, and grew rapidly, but were all a mass of small leaves and a bunch of stalks. They grew bigger and bigger all summer,

but never bloomed, and seemed different from those I have seen in pots, or where they are grown for cut flowers.

Now what was the matter? I might add that a neighbor of mine has tried to grow them in pots, but fails to do well with them. The Tuberose is one of my favorite flowers, for it is so pure and white and sweet-scented, that I can not give up trying to succeed with them.

Mrs. J. R.

ALAMEDA, Cal.

[In the second case, either the bulbs were not good blooming bulbs, or they had been neglected, and allowed to spoil so that the centre bud failed to start and a multitude of smaller ones helped to make a mass of leaves. These side bulblets, if well grown, will bloom the next year. We should be glad to have some of the gentlemen who grow Tuberose for market, tell us something of their methods, time of planting, treatment, and similar facts.—EDITOR HORTICULTURIST.]

A HILLSIDE HOME.

EDITOR HORTICULTURIST—Dear Sir: I live on a hillside, a barren-looking, dismal kind of a place. There are Manzanita bushes, likewise Digger pines. [P. Torreyana.—ED. HORT.] Sometimes I fairly hate the looks of things, with so many white, sloping rocks, and so many black gulches. Then I think perhaps we can make it a pleasant home, and I mean to try. There is no garden at all, and I hardly know where to put one and not have the chickens spoil it. Then, too, we have to carry all the water we use up the hill from a spring about one hundred feet down. In some places near the house I think flowers would grow if the ground was fixed for it.

M. C., Lake County.

[Now, we have seen dozens of such places, and will mildly suggest a few

points. It is too late to try a garden this year. If the men-folks will pick or spade up a small plot, say ten feet square, near the house, and manure it heavily, digging the manure in, and letting it lie like a piece of summer fallow, you can next fall plant out say four Rose bushes, some Carnations, Petunias or whatever else you are able to procure. With careful mulching early in the season, it will not take much water to keep them thrifty. Then, too, there might be some boxes, soap or otherwise, filled with rich earth, from the bottom of the cañon, set by the doorstep, and something bright planted therein. Geraniums and Cacti need little care. Try a Passion-flower and a grape vine to help cover the house. Perhaps a well could be dug nearer the house, or some cheap arrangement might be devised by which horse power could be used to raise it from the spring.—EDITOR HORTICULTURIST.]

ANALYSIS OF AN ORTHOCARPUS.

EDITOR CALIFORNIA HORTICULTURIST—Dear Sir: The species before us is found growing in wet places forming a dense bed of blossoms. Springing from an annual root it has a simple or branched, slender, but rigid, stem five to nine inches high. Leaves alternate, one to one and one-half inches long, narrowly linear; margin entire and scantily pubescent. Flowers sulphur yellow and paler in crowded bracted racemes, forming cymose clusters. Bracts like the leaves. Calyx two cleft, each division having two linear awl shaped lobes; calyx pubescent, about one-half as long as the tube of the corolla. Corolla monopetalous, two lipped; the inner lip (galea), thorn-like, pale cream color, incurving and inclosing the stamens and stigma; the outer lip having three sack-like divisions of

lobes, each notched or heart shaped, scantily bearded inside. Lips equal in height. Tube, pale, one-half inch long, pubescent. Stamens, four, in pairs, united by the anthers, inserted on the tube of corolla and inclosed by the galea. Pistil, one. Stigma, one, capitate. Style, single filiform. Ovary, two-celled; placenta central, ovules numerous. It differs from the *Orthocarpus erianthus*, first in being larger, second in having a pale galea, third in having entire linear leaves. Otherwise it resembles it.

I have only Volney Rattan's little work and therefore can not give the name of the species. Its name will be gladly read in your excellent magazine by

Yours truly, JOHN G. DUNN.

FARMINGTON, April 30, 1879.

[The description agrees most nearly with *O. luteus*, a species occurring in the north-eastern part of the State. But no species with entire leaves is described in the group *Castilleioides*, in which it must be placed on account of the triseriate lip.—EDITOR.]

GARDENING IN SCHOOLS.

EDITOR CALIFORNIA HORTICULTURIST—

Dear Sir: We see in the papers in these days a great deal said about teaching gardening in schools. We are told that it should form a part of the school system, and a knowledge of it be a necessary qualification for the position of teacher. You, Mr. Editor, talk about the school garden, and paint us charming pictures of what may be. Now, I am not going to object to all this, though in my heart I sometimes wonder what is going to be left for the parents to do, when the numberless proposed additions have been made to the school system. I also muse a little, "how one small head can carry all he'll know,"

that teacher in the time to come. But this, Mr. Editor, is not what I want to talk about, I want to say that if parents will take an interest in flowers, the children will grow into the love and knowledge of them. I never saw this more fully exemplified than in taking two young persons about a garden lately. One had grown up in a home where there were few flowers, and she did not know enough to admire the plants shown her, and cared little for them. The other had been surrounded by flowers from infancy, and the flowers she knew were like old and well loved friends, while she was all excited with interest over the novelties. They had both been trained in schools without gardens, but the home influences had not been the same. Is there no way to reach the parents and make them feel what is duty to their children in this respect? Are they willing to give up to teachers the pleasant task of introducing the little ones to the fairy realm of flowers? Let them rather be themselves the ones to do this, and associate themselves in their child's memory with the buds and blossoms that tell so sweetly of our Heavenly Father's love.

L.

CATERPILLARS AND GREASE.

In traveling over the State and visiting the various orchards and vineyards, we find that the caterpillars have been hard at work on the fruit trees and vines. It has been a study for many years as to how to rid orchards of these pests, and each year a new experiment has been tried, but as yet no remedy has been discovered. Many experiments are made which are injurious and farmers should have sense enough to know what is injurious before experimenting.

A few miles above San Rafael is an orchard of about three hundred and

sixty acres, owned by a very intelligent gentleman, who has been speculating on the merits of grease. It is a well known fact that grease spread around the trunk of a tree will kill it; and yet this gentleman did not inquire into the matter, and tried the experiment without thought. Had this gentleman employed his mental faculties, he would have perceived that grease acts the same as does a method used when wishing to kill trees—that of circling them with the axe. The grease penetrates into the wood, and in so doing prevents the circulation of the sap, and trees can not live without sap.

Much labor and a great deal of capital might be saved if farmers would act more wisely.

H. JAY H.

A LETTER FROM NATAL.—We are in receipt of an interesting and lengthy letter from Mr. William Ireland, Missionary at Amanzimtote, Natal, South Africa, where he has resided since 1849. Mr. Ireland kindly calls our attention to a book entitled "Grout's Zulu Land," which contains a chapter on the Flora and Fauna of Natal, and will repay a careful perusal. "Our climate," says Mr. Ireland, "is not materially unlike that of California, especially the sea-coast near San Francisco, where I spent a pleasant two months in 1876." One of our ideas is to make this monthly of practical use to those parts of the world which have a similar climate to ours. We know that we have a field of our own, unoccupied by any other monthly, and daily we recognize more clearly its extent.

EDITOR CALIFORNIA HORTICULTURIST—Dear Sir: Your postal cards came duly to hand in regard to horticultural matters for the magazine. My good friend, of all things in this world I dislike writing. If on business, I do it in

as brief a manner as possible, but to spin a horticultural or floricultural yarn, I never could do it. I have been requested by many horticultural editors but have failed in every attempt, so do not think it unkind of me for not writing.

Yours, etc.

[We think all our readers will agree with us, that the gentleman who could write so handsome an apology as the above, *could* have given us an article, for which we, and all our readers, would have been profoundly grateful. We are the more sure of this because we know he has a large fund of experience upon which to draw. We are not without hopes that he will reconsider his decision.—EDITOR.]

RIVERSIDE'S FRUIT GROVES.

EDITOR HORTICULTURIST :—We are under many obligations for the valuable suggestions given in your magazine concerning the best shade trees for our avenue. One of the objections raised against the evergreen does not apply to us, as we have very little rain, and the ground is so porous that it never produces mud. As we claim to be the centre of semi-tropical fruit culture in California, I give the number of trees and vines as shown by a recent canvass:

Orange trees.....	160,861
Lemon "	23,550
Lime "	28,642
Olive "	3,531
Muscat Grape vines.....	221,465

Nearly all of our orchards and vineyards have been planted during the past two years. Our trees are perfectly healthy, neither they, nor their fruit, having any of the rust or mildew so prevalent near the coast. Our Oranges, Lemons, and Raisins have born off the honors at all exhibitions, and we feel very proud of our success.

ALBERT S. WHITE.

Riverside, San Bernardino County.

Selected Articles.

RAINFALL AND SUN SPOTS.

The relation between rainfall and sun spots is a subject which has been discussed with no little heat for a few years past. Of speculation and theory there is more than enough, and it is time to collect and note the facts. Here is a table showing the readings of the Nilometer for thirteen years, from which it is clear that the river Nile during that time at least does not confirm the rule. Maximum spots—maximum rainfall :

Years.	Depth of the Nile. Feet.	
1866.....	28 $\frac{1}{4}$	Minimum spots.
1867.....	24 $\frac{1}{2}$	
1868.....	19	
1869.....	29 $\frac{1}{4}$	
1870.....	25 $\frac{1}{2}$	Maximum spots.
1871.....	23 $\frac{1}{4}$	
1872.....	25 $\frac{1}{2}$	
1873.....	20	
1874.....	29	Minimum spots.
1875.....	24	
1876.....	25	
1877.....	18	
1878.....	30	

—Popular Science Monthly.

HINTS ON BOUQUET MAKING.

A bouquet seems an easy thing to make when all the flowers are so beautiful separately. Surely just to pick them and put in a vase is simple and easy enough, but alas ! nature possesses a subtle secret for blending colors which we poor mortals can not wrest from her. The moment we transfer them from their garden home to our drawing-room the charm is gone. Then experience comes to our aid and gives us the following hints: *Don't crowd your flowers.* Flowers have their individualities and affinities, which we must recognize and respect. For example, a spike of brilliant scarlet Gladiolus, with a feathery bunch of Asparagus, and a gleam of white Feverfew here

and there, will light a shady corner like a torch, but smother your stately blossoms with Phlox, Verbenas, and a host of floral beauties, you will see at a glance how the effect is weakened. Again, Petunias, with their stiff sprangly stems and delicate blossoms, are very difficult to combine with any other flower, but give them a wide-mouthed vase, and no rivals, and they are positively graceful, while their delicate perfume fills the room with its fragrance.

A Fern bed in some shady corner is a great help in giving lightness and relief to the solid flowers in this mode of arrangement. Rose Geranium leaves, alternating with Fern tips, make a beautiful edge about any shallow dish ; next lay some stiff stems criss-cross on the water to prevent the blossoms sinking ; then lay in Balsams, Pansies, a Tea Rose, or any dainty blossom you have, being careful to have plenty of Sweet Alyssum or some white flower to blend, and you will be charmed with the result.

In choosing vases select delicate white or some neutral tint, no gaudy color, for the flowers should be the point of color, not the vase. — MRS. J. B. ROOT, in *Ladies' Floral Cabinet*.

ROSES.—Rose cultivation is, in south-eastern France, a considerable industry. The perfume manufacture in the department of the Alpes Maritimes consumes annually 6,000 hundred weight of roses, and the neighborhood of Grasse and Cannes is thickly studded with rose farms ; 80,000 bushes are planted in one hectare (two and one-half acres), and a good bush yields for about twelve years. May is the harvest time. During the summer the field takes care of itself. In fall it is carefully weeded and manured, the manure consisting exclusively of offal from the

perfume factories and other vegetable matter. Such a hectare planted with rose-bushes and in good cultivation is worth 10,000 francs, and brings, in an average year, a profit of twenty-four per cent.

[We found the above item in an exchange, and place it here as a suggestion. Is there not a possibility of adding a new industry, and one that would furnish light work for women and children?—EDITOR.]

THE VIRGINIA SUMACH CROP.—In a late issue of your paper inquiries were made about sumach as a tanning material. There are, at least, seven different trees and plants called sumach—Chinese, Common, Dwarf, Poison, Smooth, Stag-horn, and Venetian. The Smooth (*Rhus glabra*) is the best, having about 26 per cent. tannic acid. The Dwarf (*Rhus copallina*) is next, having about 24 per cent. of the tannic acid, as near as I can find out. The leaves are mostly used; some break off the small green tips with the leaves on, but the buyers do not pay as much for it if there are many twigs in it. It is best to gather only the green leaves, as they dry quicker and can be put away under cover, or sacked for market, without as much danger of being injured by storms, if the drying is in the open air. To bring the best price, it should be very dry and of a bright green color.

Sumach grows in all the old fields and around on most of the ditch banks. A good hand will pick and dry in a bright day 75 to 150 pounds, under the disadvantage of forcing his way through cat briars and brush. It is ground here by wooden mills, made for that purpose. If it is dried in the sun, it should be stirred and turned every few minutes, or it will turn brown. It was sold last year at 65 cents per hundred pounds, costing the millers about 75

cents. The year before it cost the grinders \$1 30. About 1,400 tons were bought in Petersburg in 1877. One firm in one day received 8,000 pounds. I have not learned how much was received this last year, but not as much as the year before. The gathering begins as soon as corn is laid by—about the first of July—and is kept up till frost, or till the leaves turn red. The greater part is gathered in August and September here, and mostly by the negro population. Last year it sold, after it had been ground and sacked, at \$50 to \$60 per ton for export. It is mostly used in tanning glove leather and other finer leathers.—J. P. D., in *Country Gentleman*.

TO DRIVE AWAY RATS.—A lady writer in a recent number of a New York journal discourses in the following style concerning her treatment of rats and mice: We cleaned our premises of these detestable vermin by making a whitewash yellow with copperas and covering the stones and rafters of the cellar with a thick coating of it. In every crevice where a rat might tread we put crystals of the copperas, and scattered the same in the corners of the floor. The result was a perfect stampede of rats and mice. Since that time not a footfall of either rat or mouse has been heard about the house. Every spring a coat of the yellow wash is given to the cellar as a purifier as well as a rat exterminator, and no typhoid, dysentery, or fever attacks the family. Many persons deliberately attract all the rats in the neighborhood by leaving fruits and vegetables uncovered in the cellar, and sometimes even the scraps are left open for their regalement. Cover up everything eatable in the cellar and pantry, and you will soon drive them out.

Editorial Department.

OUR HOMES.

A beautiful home is the epitome of whole ages of struggle. It has existence because certain rude savages, away back in the twilight days of earth, evolved first the relationships of family, and, next, the theory of private ownership of property. Whatever we love most absolutely has grown from these two ideas. No theory of common life, or of common property, has ever won favor with the honest and intelligent. The names of mother and father are sacred memorials; the firesides of the sons and daughters of men will glow and brighten in their dreams; for hearthstone and lintel men go forth to fight and die without a murmur. If, as we sometimes think, these are hard years and dangerous times, full of dark problems and new struggles, we are to appeal to the quiet homes of the land, rallying and strengthening the purity and courage which has never yet failed to answer. What if men and women, themselves trained in the earlier days of the republic, have in too large a measure delegated the education of their children to others? What if luxuries of the comfortless and cold-blooded order too often predominate? What if we are drifting away from our moorings year by year, living costlier, but not happier or more intellectual lives? If there is danger in any of these directions, we shall not find a remedy in loud cries, or in legal enactments. Law of the repressive, "must-not" order, is only a lesser evil. Against the dangerous tendencies we must build up a home-barrier. Affirmation is stronger than denial; strength says "I shall," and wins in that defiance.

Over our wide land there must be

more garden-homes; more places sacred to pure love, and growing childhood, and healthy young people; more vines and fig trees, and flashes of glorious color from beds of lilies and roses, and fragrance from heliotrope, geranium, and jasmine. There must be more cottage-homes, where the family gather by the homely fire place, to pass their happy evenings; where the best papers and monthlies crowd the table; where well-worn and precious books are on the walls. There must be more Saxon homes, where the plain, homely virtues of truth-telling and of lie-hating are learned too well to ever be forgotten. If there were not such homes, already the end of our republic would be near at hand. But, as it is, we may have more hope than despair; the undercurrents of home life beat full and clear. And the work of those who increase the culture of trees and flowers is not least among progressive forces.

THE NEEDED HORTICULTURAL SOCIETY.

Some months ago we spoke of the organization of a State Horticultural Society, and the subject has since occupied much of our thought. It has not seemed advisable to make any immediate move in that direction, for the great secret with any such thing is to begin exactly right. Our correspondence, however, shows us that much interest is felt, and that when a meeting is called it will be largely attended by our representative horticulturists. A Pomological section ought also to be organized at the same time. We have spoken with many of our leading orchardists and fruit-growers, and find that the idea is warmly received. Indeed, we have not found one horticulturist, nurseryman or orchardist who was not willing to take hold of this much

needed society, when the proper time comes, which will probably be this fall, before the rains set in. None of our Sacramento Valley orchardists or large land-owners could possibly attend now, for this is their busiest season. Meanwhile, we hope to hear suggestions.

CANNING FRUIT.

The next great movement in this State is going to be toward fruit growing on a large scale, with an ultimate view of supplying the foreign trade with canned fruits. It is mainly a question of cost. At what price must we sell our canned fruits so as to inevitably secure a world-wide consumption? Can we, at a fair profit to ourselves, raise trees, plant, cultivate, prune, and watch over them, thin fruit, gather it, make or buy cans, put up the fruit, box the cans, and ship to London? Well, it has been done, and so far it looks better than wheat, or sheep, or cattle. If there is a fair working profit at a price which will permit the middle classes to use our canned fruits there is no visible end to the growth of the business. It will make our richest and sunniest valleys continuous orchards. Our increased population will use up more of our grain products, and build up home manufactures. Let us only get the good name of our canned fruits once established and the rest will be easy. But we must not forget that we have many rivals. England would rather see some of her colonies fruit-producing centres than to be obliged to purchase here. Florida is going to compete with us for the foreign orange markets. The table-lands of Mexico would be wonderfully productive if owned by an energetic people. We may be sure that we are not monopolizers of any peculiar fruit-growing gift. Hard work and endless patience of the

active sort, and a willingness to study well the needs of those foreign markets, which must be our hope, will give us a healthy and safe development in this new industry. It is evident that only the very best quality of canned fruit will pay to ship. Such canned fruit as nice, careful housewives put up for their own use will sell anywhere. Stale fruit, picked green, and transported miles before it reaches the factory will not advance our credit. Nor will it do for orchardists to sell their larger fruit and can the poorest. The best produce of the orchard must be canned at home, or near home, by neighborhood factories, not more than five miles distant. The fruit must be left on the trees until in the right condition—highly colored and flavored, but a little firm. Each can must be labeled with the owner's name, as guarantee and as advertisement. The name of the variety of fruit should also be on the label, as, for instance, Early Crawford, Galway, Heath Cling, or Morris White Peaches, Bartlett, Fall Butter, Seckel, or Glout Morceau Pears; White Magnum Bonum, St. Catherine's, Green Gage, or Coe's Golden Drop Plums. In this way the really superior kinds would soon become the most popular, and also the most profitable for growers, and there would be a prospect that the public might in some degree become educated in the niceties of fruit flavors.

We think that it may prove advisable to put up our best canned fruit in glass jars, laying each piece in with the utmost precision and nicety, thus making what might be termed a "gilt-edged grade." Fruit for the ordinary markets, for use in hotels, on shipboard, by travelers, and by the middle classes, will probably be handled best in the ordinary tin can. These, however, are points which the future will settle much

better than any speculation. One thing though is certain, that the requirements of the canning interests will hereafter largely control our orchard planting. The varieties which they find best, and need most, will be most largely planted hereafter.

A STORY OF THE MINES.

The mining camp of Mabie was shut in by forest-covered heights, and shadowy mountains, and royal, shining peaks of snow; translucent, ethereal, tremulous with the awakening rose of morning and the fading hues of sunset. From under those far peaks an icy river crept, and wandering south for many miles met another similar stream flowing nothward, and they flowed on together to the ocean. The busy little town was clustered about the point where these rivers united; and a dusty road, winding down the hillside, crossed the black rough-hewn bridge, and slowly passed out of sight. This road was the only connection with the outer world; the great hulks of the freight-wagons rose and fell over hummock and rut; the light mail-wagon passed; the mule-mounted prospector trotted by; and, at somewhat rare intervals, a foot-sore, impecunious wayfarer rested his weary limbs in the pleasant little town.

There was a white cottage by the roadside just at the entrance to Mabie. Garden there was none, for the soil had been sluiced off down to bed-rock, but an Oleander bush grew and flourished in a large box by the door. A little girl stood by it tiptoeing up to smell the gorgeous masses of bloom. Just then a foot-sore miner, evidently tired, hungry, and discouraged, came slowly along the road, weighted by a roll of blankets. He was, in simple truth, an unkempt, ragged, rather truculent looking miner, and seeing the little girl and

the blooming Oleander, he stopped by the gate and looked in.

"Little girl," he said in a low tone, "them's purty flowers; could ye give me one?"

The child looked at him half afraid, but she summoned up courage at last, and breaking off a cluster which drooped temptingly near, held it half doubtfully a moment, and then tripping shyly down the broken steps placed it in his hands. She hardly waited to be sure he held it before she fled back to her vantage ground, and sitting on the step of the porch, poised her chin on her hand, looking coquettishly up at the brown, bearded miner.

There was a long pause, and silence. The miner laid his cluster of flowers on the fence rail, and fumbled uneasily with the buckle of his heavy pack, from which the flat handle of a frying-pan protruded. The little girl watched him curiously. He unstrapped his bundle, give it a kick, and tore it apart. From the very middle he took a yeast powder can, wrapped about with cloth and tied up with a buckskin thong. A smile spread slowly, and with considerable difficulty, over his face as he shook it and heard a faint rattle.

"Come, little girl," he said, looking up toward where she sat, "come down an' see me a minnit."

She looked shyly down, in a wavering attitude, hardly knowing whether to cry or smile, but curiosity won, and the chubby child began to climb down the rickety steps, until she stood by the fence, and peeped through between the boards. By this time the miner had opened the yeast powder can, which contained a handful of gold dust and a few nuggets. He chose the largest, an irregular bit, worth perhaps twelve or fifteen dollars, and gave it to the little blue-eyed child.

"It's my turn now," he said, "that's for your weddin' day, little girl. Jes' ye tell the folks as how an old prospector came along an' wanted a flower to put in his button-hole."

He gathered together his traps and simple household arrangements, drew the gray blanket about them, and corded it tightly; then he took up his burden and climbed slowly up the dusty slope until the drooping cedars shut him out from sight.

It is a simple tale of one of the brave, cheerful, generous men of old. Their place in history and in the hearts of Californians is secure. In countless ways these earnest toilers proved their manhood. Under the red shirts beat true and gentle hearts; and the mountain streams, where of old they made their camps, are full of memories.

THE BUERRE COIT PEAR.

Our illustration shows a native American Pear which has gained a good record. It was originated by Col. H. H. Coit, of Euclid, Cuyahoga County, Ohio. The report of the department of agriculture says "it is of such excellence as to deserve a place in all collections," and Downing gives it a good name.

Fruit.—Size, above medium. Form, obtuse pyriform; slightly angular. Color, rich brown russet, mostly overspreading a yellow ground, with a brownish red cheek in the sun. Stem, rather short, with an occasional lip-like form at its junction with the fruit. Cavity, shallow, with unequal projections. Calyx, with segments nearly erect, surrounded by depressed, crescent shaped furrows, in a shallow basin. Core, small. Seeds, blackish. Flesh, yellowish white, melting, buttery, juicy, sweet, vinous. Season, in the Eastern States, September and October; here, last of August and in September.

Tree.—Hardy, vigorous, and upright grower, becoming spreading as it matures, with dark brown shoots and broad waved leaves, with rounded serratures. The tree is productive, and comes early into bearing on the pear roots. We are indebted to the *Rural Press* for the use of the engraving.

TO OUR CORRESPONDENTS.

Letters we have lately received, ask questions which can not be answered briefly. There is room, let us remark, for articles on "The treatment of bulbs," particularly for pot growing; on "The Olive," its culture and varieties; on the "Tamarind," "Guava," and "Banana." Also, as the last letter, now at our elbow, suggests, for "Summer Garden Chats." Let us tell each other what we have blooming at this season, and what we find does best. It is to be hoped that every reader of the *HORTICULTURIST* will, at least once a year, help this department along, if only by a postal card. Our letters are the delight of our lives, and, with Dickens' immortal Oliver, we entreat for more, more!

A MUCH DESIRED REMEDY.—We have received notes from several friends with reference to the common striped squash-bug, which has made mischief in the rose-buds, eating them out, and ruining them completely. We have ourselves seen some sad instances of ravage on the rose bushes by these marauders. Who has had experience, and who will step to the front with a tested remedy. Here is a chance for immortalizing one's self. Everybody wants to know some specific. There is no pity for the squash-bug anywhere in the horticultural world. He has ravaged the vegetable grower's melon vines, the nurseryman's peach trees, and now even the Marechal Niels of our gardens! Really, this is too much!

Editorial Notes.

THE CAMPING SEASON.—We know a valley in the foothill region, which shall herein be nameless. There floweth a river of that abiding and friendly sort of which we get glimpses in George Macdonald's fairy-land romance. And this river hath a quiet, sister-like way about it which delights the heart most at twilight, when one comes nearest to believing in naiads and water-spirits, and elementary creatures not yet grown to man's larger domain. Sometimes the best companion to be imagined is such a gentle river, with its ripples and changeful eddies, its interlacing light and shadow, its mimic leaf-boats, and its indescribable sense of restful delight. No matter how far weak men have wandered in paths thorny and bitter, this is the Singing Land where all is forgiven; here is the charm which draws us from the wrangling cities whose sleepless jar is as a curse. By the flowing waters let us rest weary brain and tired hand. We work so hard in California that we need long rests between. Think of the moist ravines, and glorious forests, the rippling falls and shy trout streams! Respectable people camp out awhile in summer, if they can find a dollar, or a week of time.

A COLUSA GARDEN.—Colusa County has always seemed to us a rather worthless and waste corner of the world. We knew they grew wheat there, and had more politicians to the square yard than any other county. And we knew there were black gnats along the river, to spoil the veriest paradise of woods and wide pastures. But still we had little faith in Colusa. Nevertheless, repentance is meet; we have seen one garden and are conquered. If the people of Colusa are willing to work for it they can make their land blossom like a world of summer roses, or the poet's June-month. Near the mouth of Cortina Valley, and overlooking the warm plains and the blue, fragmentary Buttes of Marysville, there is a garden—Mr. Stewart's. Roses are here, and lilies beginning to bud; spireas and other choice shrubs; semi-tropical plants, masses of annuals, and orange trees with fruit well set. And three years ago this was unbroken sod! A wind-mill, with supplementary horse power for use in calm weather, furnishes water, and a sprinkler is busily at work distributing moisture. Can't we persuade all the farmers to plant lovely gardens, and so double the joys of life?

SHELTER FROM THE SUN.—July is warm weather month in most of our gardens. Perhaps choice plants, such as lilies, will show the effects of the heat. Lily buds may even blight and drop off, causing much disappointment, and the loss of a whole season's labor. It will then, since removal is impossible, be necessary to make an artificial shelter of some kind. Beautiful and costly awnings are used in England, and to some extent in the East. But if this can not be done, some cheaper but equally

effective method may be used. We have seen evergreen boughs thrust into the ground, and the tops tied over the plant. This is not so liable to blow off as a sack tied to sticks, and looks better. But, to avoid trouble another season, plant lilies where they are somewhat sheltered by large shrubs or trees.

A LARGE OLEANDER.—Mr. Griffith, of Cacheville, Yolo County, lately showed us the largest Oleander it has been our fortune to find hitherto. The trunk is about eleven inches in diameter at the surface of the ground, and fully eight inches in diameter at the parting of the branches, which is two feet above the ground. The head is wonderfully large and symmetrical, and is supported by bars nailed in the form of a square, and lifted up on posts set near it. Being in full bloom when we visited it, the effect was that of a superb bouquet of Brobdignagian proportions.

THE CHINESE CLING.—Mr. Card, of the Woodland Nurseries, showed us his stock of fruit trees for the coming season, and we feel bound to declare that they were as well grown as the best. We were particularly interested in the Chinese Cling, a white flesh peach of great size and delicious flavor, originated, Mr. Card thinks, in Mississippi. Mr. West, of Stockton, has a Chinese Cling which he recommends highly, but whether it is the same as Mr. Card's stock we are not yet able to determine.

SUMMER PRUNING OF VINES.—We notice that some viniculturists are under the impression that there is virtue in clipping off the ends of the young growth of grape vines in June, or thereabouts. We declare distinctly, that we have never seen any good to come from the practice, and thinking men who will subject the matter to honest and faithful experiments, will, we feel sure, arrive at the same conclusion, in a majority of cases at least. The reasons against are self-evident. To cut back the ends of the canes when in full growth and forming young grapes, can not but check the sap too suddenly, and compel the vine to devote itself at once to the production of a new growth. That this lessens the crop and ultimately weakens the vine is the belief of our most successful viniculturists. Pull off the useless sprouts, which process is called "suckering," and needs to be repeated several times during the early part of the season. But let nature take care of the longer, fruit-bearing canes.

RICE ON THE TULE LANDS.—We feel sure that the tule lands of our State will ultimately become sources of vast revenue, and the support of many thousands. The problem of reclaiming, whether in larger or smaller tracts, that enormous belt of rich black soil which extends up the Sacramento, and up the San Joaquin, and along the borders of our bays and lesser rivers, is one which can not be wholly conquered in a day. Here is work for the future, and we are glad that it is so. The success of vegetable growing on

reclaimed tule land is undoubted. They also make the finest of pasture lands, and, near the sloughs, where the soil is of a more sedimentary character, may be devoted to pears and apples. But we have not yet heard of any extended cultivation of rice, and we can see no obstacle in the way, wherever the surrounding waters are fresh. General Williams, the Sargent Brothers, or any other of our leading tule land owners, might levee about a few hundred acres, separating it from the main tract, put in tide gates built so as to be controlled, plant rice of the best variety, and flood it whenever required. There is every reason to suppose that it would be remunerative, for home grown rice ought to be of better quality than any of the imported.

ORCHARDS OF THE CALIFORNIA FRUIT GROWING ASSOCIATION.—In El Dorado County, four miles south of Placerville, is the extensive range of this Association, embracing some three thousand acres, some rolling, almost mountainous, but all of it good fertile land. Our correspondent, Mr. G. Howatt, whom the readers of this monthly will remember, is Superintendent, and the *El Dorado Republican* contains a long account of a visit to the grounds. We have not room for more than a few brief notes. There is an apple orchard unusually well fruited; whole acres of peach trees, whose yield this year will be between three and four hundred tons; level land covered with plum and prune; fifty acres now in barley, to be planted this fall with raisin grapes, etc. Next year there will be a canning and drying factory put up.

UNDERGROUND IRRIGATION.—At the head of Capay Valley, just before one begins to ascend the the grade which leads to Lakeport, there is a pleasant, home-like ranch belonging to Mr. Rumsey. Here we noticed some experiments in the use of water. Some grape vines on a dry point with gravel near the surface, and no water, have been in the habit of drying out too early, and producing only half a crop. The water ditch was three feet lower than the vineyard, so a trench was cut down one row, willow brush put in, and covered with earth. The water flows under and the difference is plainly shown by the increased growth of those two rows of vines. The brush will be replaced with brick or stone another season.

A WIND-BLOWN GARDEN.—To have a garden where the winds blow is, doubtless, not comfortable. But we have seen some of the genuinely flower-loving people, who are the salt of the earth, succeed in such places, and we confess we respect their patience and pluck. There is, in one of the central counties of this State, a wind-swept plain of rather poor soil, the hard-pan being near the surface in most places. As a consequence the most of the farm-houses look dolesome, poverty-stricken, forlorn, black with age and dirt, and, sadly be it said,

treeless and flowerless. In some directions there can hardly be said to be a cabbage for miles! To dream of rosebuds were absurd. Now, the restless sweep of these tiresome winds is in one instance mitigated by some cotton-woods, blue gums, and fruit trees, not of strong growth, but still reasonably successful both for shelter and for fruit. Then, also, on the east side of the house, where fences and several out-buildings add their quota of protection from the western gales, there is a grass plot and a garden, as glimpses of an oasis in deserts of brown sand. It would not be considered a wonderful garden were it bodily removed to Oakland, but it really shows considerable variety, and much taste and praiseworthy energy. Here are petunias, the flower for sunny weather, and for children's gardens; roses of many hues; geraniums, honeysuckles, and other vines, including the beautiful yellow canary bird vine; annuals of several sorts, and pot-plants, and, which we must not forget, pansies just budding. The ground in this garden was broken up, with much labor, and manure and sand were added. This was done as the intervals of farm work would permit, and of course progressed slowly. But the result has been a pretty garden, as it were in a wilderness of no gardens. And, as our text saith, each one of the other farmers on those windy plains might have done as much. It is their shame and misfortune that they did not. Cash expenditure there was little. We suppose that five dollars would cover all that the M——s spent for plants or seeds. People who have gardens love to give cuttings away—and that is a cheap method of beginning to beautify a home.

TAMARIND TREES.—We saw half a dozen young Tamarind trees growing with much vigor in a handsome garden near Woodland. The climate there seems to be exactly what they want, and we shall watch the progress of the experiment with great interest. Some years ago we saw quite large plants growing in one of the sheltered and lovely valleys of Santa Barbara. Unless they have met with some accident there ought to be prospects of fruit soon.

A RENOVATED ORCHARD.—A friend of ours bought a neglected farm last year. The orchard had been used for a pasture. He cut out the old wood heavily, sawed off the tops of the poorest trees to make new heads, plowed deeply and harrowed, repeating the process several times. Result, every prospect of a fine crop, and a permanent orchard. This coming winter the vacant places are to be filled out with trees of newer varieties to make a succession.

THE DOUBLE RED POMEGRANATE.—We lately saw some fine and large specimens of this remarkably handsome shrub. The double is better than the single, for the flower is larger and lasts much longer. The Pomegranate is a sort of classic shrub. Planted upon the hillsides of Pleasant Valley, with the sleepy

blue of the mountain ranges beyond, it gives the place an air of Asia Minor. It has the glossiest of leaves, and the most graceful of drooping branches. Sometimes a bush looks like a fountain perpetually flowing, and, at this season, lit with flashes of scarlet fire. Then, also, the leaves grow golden yellow in autumn, and add another, though evanescent, attraction. Now, let whoever has a spare corner plant a Double Pomegranate next winter.

TWO NEGLECTED ANNUALS.—We noticed a garden where a good display had been obtained this season at little expense. The flowers grown last year grew up again from self-sown seeds, as they often will in this climate, and the owners merely cut out the surplus, leaving clumps at convenient spaces to increase and bloom. There were many gorgeous masses of Snap-dragons (*Antirrhinums*), Phloxes, Petunias, and other flowers. We noticed *Phacelia congesta*, which is one of our common wild flowers in the bay counties, and which in masses produces a good effect with its lilac and hairy clusters which uncoil as they bloom. We also saw the so-called shell flower, a native of the Mollucca Islands, each brown flower being set in the middle of a shield-like cup of veined green, which gives the plant its name. This was, if we remember rightly, distributed by the *Rural New Yorker* as a premium some years ago. Its culture is extremely easy.

OUR AUTUMN LEAVES.—We have been accustomed to say that our autumn leaves were not nearly so highly colored, or so permanent as those of the Eastern States. This is in a large measure true of leaves gathered in the lowlands near the bay, or where there is no cold weather. But some localities produce a brilliantly tinted autumn leaf, which elicits expressions of admiration from the most critical of New Englanders. In Northern California, near the knotted ridges and twin peaks of Lassen, in Pleasant Valley, and in other places where we are acquainted, the wild Grape, Blackberry, Dogwood, Ash, Maple, Judas tree, and others too numerous to mention, produce autumn leaves of all tints and colors from light yellow to shining scarlet, and purplish red, and they also keep their colors well. In this respect there is a great difference in autumn leaves even in the same season and from the same bush. Leaves which are well ripened up retain their colors in favorable localities, but unripened leaves, although often quite handsome for a short time, are quite as evanescent.

GIVE FLOWERS AWAY.—This is the month, in all our bay gardens, for an overflowing abundance, somewhat sobered down, it may be, from the untempered luxuriance of June, and the earlier enthusiastic outpourings of hoydenish May. But now the gardens have settled down to exactly thirty-one days of continuous bloom. Each lovable and treasured little garden is now a sort of blessed opportunity for

gift-making. Suppose you have Pansies, at this season apt to blossom too much, go to seed, and become comparatively small. Pick them daily, give them away, mail them to every one you can think of—to tired teachers in dusty ravines, and to weary toilers in stores and factories. Even the censorious and often-quoted Mrs. Grundy might, we imagine, be mollified into a forgiveness of other people's peccadilloes if she were sufficiently overwhelmed with gifts of flowers from all sorts of quaint and stilly gardens. Golden-hearted lilies there should be, and slender, creamy rose-buds, and clustered, drooping fuchsias. But the list is too long; let the brotherhood and sisterhood of flower-lovers finish it for us.

CACTI ON ROCKS.—One day, not long ago, as we rode slowly up a winding mountain road, we passed a cottage surrounded by vineyards which covered a rounded hill near the house, and crept far up the mountain slopes until the soil became too scanty, and chaparral and rocks thereafter possessed the ridges. Pink wild roses covered the rude fence of slowly decaying logs, and close beside the cottage was a rugged pile of weather-beaten rocks, in whose crevices vines clung and tangled, while, on its sunnier side, a dozen brilliant scarlet-blossomed Cacti had been planted. That was all; this was no home of wealth and of carefully considered effects. But a royal landscape gardener, fresh from costly labors, could not have surpassed the simplicity of the effect. That one flash of Cacti color, which, as our readers know is indescribably velvety, and glorious, was the central point in the landscape, and yet found a sufficient relief in the waves of soft green on the summer hillsides, and in the deep masses of entangled vines about the base of the rocks, which even half hid the scarlet flashes. Is there no suggestion here for our own wild gardens? Let us try something similar if there is any rocky point, or southern slope, intensely hot during summer.

A PALM TREE ONLY.—Last evening we sat on the soft green turf, feeling the warm wind from the upper Sacramento Valley, lotos laden, and sweet with memories of other days. The lower slopes of the hills were murmuring fields of wheat; higher yet were darkened and dusky peaks of chaparral, and silver-white, mail-clad pines, yearning, with mystical sighs, for human speech; highest of all were the cold, passionless stars, full of their "wise patience," quickening one's heart with deathless and dateless desires.

Then there was the dark orchard, massed in the valley, and the soft, intangible fragrance of the ripening peaches filled one's senses with that delight known on sultry summer afternoons when from the singing hives there comes a faint, mingled fragrance of pollen dust, and bees. And, turning a little, where a gap in the hills was yet clear with the pallor of twilight, there was a Palm tree, gloriously beautiful,

long-fronded, dark, and sharply outlined as a silhouette picture. Slowly one's thoughts clustered about its uncomplaining loneliness, its grand simplicity. It became the heart of that shadowy world. Under tropic suns, by slow, poisonous rivers, in oases of interminable deserts, on islands of coral, mere reefs wave-sprinkled—there over the golden cradle-lands of men, where nature is only too kind in her gifts, is the home of Palms, those glories of the vegetable kingdom. Who shall describe their clustered beauty aright? who shall shape into words the heart-sick loneliness of a single Palm upon a foam-wet reef? And here, in a warm valley of the Coast Range, is a stately Palm worth a pilgrimage to see. Would there were others like it, planted for the delight of our children's children.

LET US TRY SOME GINGER.—The Chinese Ginger-root ought to be successful here. It is of easy culture, and the profits are large. An acre will yield a ton of roots, worth dried from twenty-five to fifty cents per pound. The loss in drying is comparatively small. Made into preserves, it is worth from one dollar to one dollar and fifty cents per pound. It needs good rich soil, and a warm climate. We have dozens of mountain valleys and ravines where it would succeed. Foggy weather and cool nights are not the thing. We have grown the Ginger in Alameda Co., but plants put outdoors did not begin a growth until late in the season, on account of the cool nights which we have. As for the roots to start with, we feel sure that almost any one of the Chinese merchants of San Francisco would procure fresh ones for a mere trifle. Each root will send up a grass-like cane from every joint, and division has been successfully practiced.

THE GROWTH OF HORTICULTURE.—As we, this summer, have been traveling through the central and northern counties, there has been a distinct, and very gratifying impression of improvement, as a whole, in the country gardens. More flower gardens there are now, most certainly, than there were two or three years ago. People are beginning to improve their places. We are not any longer a State of campers; we are home-builders; we mean to stay here, and eat the fruit of our own orchards, and pick the roses of our own gardens. This is, certainly, a very hopeful state of affairs, which to encourage is our duty and delight. No depression in business or excitement in politics can alter the currents so strongly setting towards horticultural pursuits.

THE CANARY BIRD VINE.—We sat on the shady porch of a friend's house in Denver, Solano Co., one windy afternoon in May, and saw the long trailers of our hostess' favorite Canary Bird Vine swaying in the breeze, as if to the more fully display their bright golden and quaintly fringed blossoms. Grown from seed that season, it already reached the eaves, and nearly covered the space between two posts of

the porch. Hardly any one passed by without admiring it. Each day there were new blossoms, even when one cold and windy night some of the leaves were frost-bitten, and hung limply downward. It is a beautiful vine, although a little tender, in some localities. Next year, when you are ordering seeds, be sure and remember the Canary Bird Vine. It is, let us not neglect to say, a delicate-leaved species of *Tropæolum*, as any one could guess from the scent of the crushed leaves.

THE PIEDMONT SCHOOL GARDENS.—Last month we advocated the planting of flowers in the school-yard, and a most gratifying instance of ornamenting the school-grounds has recently been brought to our notice. At Piedmont, in Alameda County, the grounds belonging to the school have been laid out in symmetrical beds, and planted with trees, shrubs, and soft-wooded plants. So far everything flourishes, the children help to take care of the flowers, and prospects are bright indeed. Mr. H. P. Livermore, one of the trustees, sent five two-horse loads of plants as a gift, and had them set out at his own expense. Now, if we were going to teach again, as in the days of old, that is the sort of a school we should want. But we can visit it, at least, and some of these days we will. Only, don't forget to let each child have a little corner for private garden work.

MANURE FOR MULCHING.—The flower-beds ought one and all to be mulched with something during the summer. If the soil was well enriched last winter, rotted leaves or almost any substance will do. But we have found that a top dressing of the well-trampled manure from the barn-yard is of great benefit to all plants, and particularly to late blooming annuals such as *Asters*. Lumps and flakes of heavy manure are not desirable. It is that which the hoofs of cattle have pounded up, and made easily available which we recommend. This, spread on the surface, and nicely fitted about the roots of each plant, will much lessen the amount of water needed, and will produce a growth which is almost unparalleled in the chronicles of the garden. In localities where people think it is "too hot in summer to have flowers do well," this mulching process is a great help.

TOMATOES FROM CUTTINGS.—We were shown a beautiful and thrifty tomato plant in a garden recently, and desired to "look at it hard," but, failing to discover ought else than tomato leaves and blossoms, came back upon our querist with a Yankee-like reply of "what is it anyhow?" Well, it was grown easily and rapidly from a cutting of new wood, and, we are told, this is done to a considerable extent in the southern counties. We are not aware that any one, even in warm localities, has tried this plan for market plants. It might be cheaper than seeds, but we hardly think so. If, however, a chance seedling should show marked advantages, this method would insure its perpetuity.

SUMMER IRRIGATION.—By this time, in dozens of small gardens, the pressing need of water will be felt. Some unthinking persons will doubtless sprinkle water on the surface, with much ardor, but with less discretion. Almost daily the process will be repeated, but the earth will nevertheless parch, and harden, and if one digs down a few inches it will be found dry. Sprinklers are good for lawns, as also for sandy soil, but the true plan, with shrubs, or border plants, is to let the water run on the surface, or in a shallow trench made with a hoe. Keep on watering until the soil is very wet, soaked, in fact, then shut it off, and wait until the surface begins to dry, and is in good working order. Then stir it with hoe and rake, and do not water again until there is evident need.

Pomological Notes.

A NEW APRICOT.—Two of the orchardists of Pleasant Valley showed us specimens of a seedling apricot which deserves mention as perhaps of value. One man claims to have three thousand trees growing. Two persons, we believe, hold all the stock, and there has been a rumor that a Sacramento nurseryman had agreed to purchase exclusive rights from one of these men. It may be a good thing. But it is well enough to make haste slowly. Of new fruits there is no end, and of sad failures not a few. But here is a practical description made from seeing the fruit on the trees: Size, medium, nearly as large as Royal; color, rich yellow, resembling Royal, somewhat more red in the sun; flavor, poor to medium; flesh, firm, quite clingstone in its nature; time of ripening probably a week earlier than Royal, and perhaps more.

MR. BLOWERS' VINEYARD.—At Woodland, in Yolo County, is one of the most successful vineyards of our State. Mr. R. B. Blowers, a gentleman of discernment and energy, became interested in the problem of raisin-making some years ago, and was the first one to produce a good marketable raisin on this coast. A recent visit to the vineyard and greenhouse was a rare treat, and some of the salient points noticed may prove of general interest. The grape used for raisins is the Muscatel, which is preferred to the Muscat of Alexandria, probably the next best variety. We are aware that a difference of opinion exists among viniculturists on this subject, some believing that the Muscatel and the Muscat of Alexandria are one and the same grape. But we, having often seen them growing side by side, most decidedly incline to the opinion that there is a difference in shape of cluster, bearing properties, flavor of grape, and consistency of pulp. The weight of evidence, as shown by the market price of different brands, is in favor of the Muscatel for raisins. Mr. Blowers' vineyard is situated on a fine level tract of land near town. An irrigation ditch takes water from the

Cache Creek, whenever it is thought desirable. This is only used for flooding the vines in winter in order to prevent the Phylloxera from taking hold. No irrigation is needed for any other purpose, the vines making a luxuriant growth, and bearing heavily without. They average, acre after acre, forty pounds to the vine. The grapes are allowed to get fully ripe, and are then gathered and placed on trays made of boards, and about three by two feet square. One of these is set by each vine, and is tilted towards the south by a clod of earth placed under it. If the season is favorable, the first crop of grapes can be dried in this way. If not, the trays and their contents are taken to the drying house, where the second crop, at least, is mainly dried. This drying house, Mr. Blowers' patent, is a compact, effective, and economical affair. It is better adapted to raisins than any other style we have seen, on account of the dry heat used, its evenness, and its perfect control. Grapes can not be dried as rapidly as some other fruits, or the result is simply "dried grapes," not raisins. Mr. Blowers' raisins, once made, are nicely packed as "layers" in various sized boxes, and have always brought the highest market price. Indeed, he usually sells his whole crop to some large dealer, and has no further worry. In this vineyard we also saw several acres of the Emperor grape, probably one of the best for shipment to a distance. This grape is a shy bearer, but, by close pruning and tying the new growth up each year, it has done better than usual here. The leading foreign varieties are represented, but not in large numbers. This is a "Raisin farm."

THE OAK SHADE ORCHARDS.—Our friend, Mr. J. B. Saul, nurseryman and seed-grower in the earlier days of California, is one of the owners of the Oak Shade Orchards near Davisville, and is, in fact, the managing man of the concern. One June morning we rode past the yellowing barley fields, and within sight of the green fringes of trees along the borders of Putah Creek, until we came to the Oak Shade Orchards. Three hundred and twenty acres here are almost entirely devoted to fruit trees and vines. The avenue up which one rides, is of California black walnut, a beautiful tree, and of more rapid growth in the warmer parts of our State, at least, than is the Eastern species. There are twelve thousand pear trees, most of them beginning to yield well. The four leading varieties are Bartlett, Winter Nelis, Doyenne D'Alençon, and Beurre Clairgeau; Easter Beurre, and Glout Morcean, are grown in lesser quantities. These pears are shipped East, and were planted for that purpose. The trees are mostly young, and not in full bearing condition. A portion of them are budded on seedling stock planted in permanent form some years ago, and this, it is thought, will make more lasting trees. A large portion of the orchard is devoted to almonds, of the Languedoc variety. Last year there was not a heavy crop, but this season the yield is decidedly first-class, and will be exceedingly profitable. We may remark that we

have particularly observed the condition and prospects of the almond wherever found, and, in many localities, must pronounce it a failure, so far as bearing properties are concerned. But there are many other places where the almond promises to succeed well; in Pleasant Valley, at Mr. Thurber's, the prospects are encouraging; the same is true near Woodland, again, and here at Davisville, both at Mr. Saul's and also south of town, in the edge of Solano, on the Briggs' place. The almond, when it does succeed, pays so well that it is worth while for any man to test it if he has any sheltered nook free from chilly winds and late frosts. The vineyard covers fifty acres, and most of the product is made into raisins. Apricots and plums show a good yield. The plums are largely Gros Prune D'Agen, Yellow Egg, and a seedling originated on the place. Several hundred olives have been planted out near the dwelling house. Oranges and lemons are quite conspicuous, but show the severe effect of last winter's cold weather, being young trees, and therefore more susceptible to cold than if older. The leading variety here is what is known as the Bidwell Bar Orange, an accidental seedling of great beauty and promise. We have not seen the fruit, but those who have praise it highly. We should be glad, if the limits of these notes permitted, to describe the growth, treatment, culture, methods of packing, and in fact whole succession of events in this orchard. But we forbear; it is a good young orchard, well handled, well located, varieties well chosen, and, we hope, to be very remunerative. Mr. Ellis, of the University, had charge here some years ago, before he was engaged on the State Capitol grounds at Sacramento. Mr. W. T. Smith, now orcharding in Placer, was Mr. Saul's immediate predecessor.

BEARING PECAN TREES.—On Mr. Briggs' large fruit farm, half a mile south of Davisville, we saw some forty thrifty and well grown pecan trees in bearing. They are eleven years old, and are considerably larger than English walnuts of the same age, which stand near them. They were heavily loaded with tassels of bloom, but the nuts, which form in hanging clusters on the tips of the young wood, had not yet appeared. The pecan, Mr. Briggs thinks, might be made a profitable tree, although the almond, where it succeeds, is better. As regards the quality of these native grown pecans, we must decidedly indorse them. A handful of last season's growth, taken from the sack without selecting, were finer in flavor and larger than any imported we have ever seen. The pecan is a good tree, a handsome tree, a fruitful tree. Small trees must be chosen to plant, as large ones are hard to move safely. And, since gophers like it better than we wish they did, said gophers must be poisoned.

SHORT FRUIT NOTES.—There seems to be a heavy crop of Bartlett pears in the State this year.

Peaches showed a good deal of leaf-curl this

spring, and anything which escaped then is probably curl-proof. Some very choice varieties, as the Heath Cling, are so liable to leaf-curl that they will succeed in only a few places, where, of course, there being less competition elsewhere, they prove profitable.

Some avenues and wind-breaks of black mulberry attracted our attention lately. The fruit was excessively abundant and fairly blackened the ground. Children like them, and they are not bad for pies, but the Persian variety is by all odds the best. The fruit of the White Mulberry is as nearly worthless as can be conceived by virtue of a vivid imagination.

We found a farm in Solano County where there were a number of large, fine olive trees, yielding barrels of choice olives of the Mission variety every season. Olive growers have heretofore only advocated the use of olives for pickling, and for oil. But here they are the favorite food of the turkeys, who keep them pretty well picked up, and seem to enjoy it. Turkeys fattened on olives is a conception worthy of a Roman Emperor!

Why does not some one send to England and get seeds of the red-fleshed musk-melons grown in hot houses there? There are several varieties known, some of good sizes. The condition of their successful outdoor culture might possibly be found in some of our warm and frostless valleys. At any rate the experiment is worth trying.

A FIG ORCHARD.—In Yolo County, not far from the snug little town of Winters, there is a fig orchard of some twelve acres in extent. It is the largest we have seen in the State, and has, so the owners say, proved profitable enough to justify the investment. The location is level, soil a good loam, fifteen feet to water. The variety mainly used is the black California Fig, which has dried most easily. Indeed, one is surprised to learn how little trouble has heretofore been taken. The figs have merely been allowed to ripen, fall on the ground, and dry there. They are then picked up, rinsed off in warm water, sacked, and sold in bulk. If, in this rude way they pay at all, it is evident, we think, that by a careful preparation and packing in small boxes, they would yield a handsome revenue. The temperature in the neighborhood of this orchard was over 105 degrees Fahr. on the three first days of last June, so that the summers may, without exaggeration, be called warm.

NEW EARLY PEACHES.—This month there is an abundance of good and cheap peaches, but none of our readers will have forgotten how high priced are the earliest peaches whose arrival is with much ardor chronicled by the daily press. Sometime in May, earlier or later according to the season, the first peaches appear from the vicinity of Putah Creek, Pleasant Valley, or Marysville. Briggs' Early May, a well defined seedling of Californian origin, as also the Amsden, and the Alexander, both Eastern

peaches of good quality and color, are by this time well known by nurserymen and orchardists. Another new peach, as yet but little known, is the Hale's Advancer, a seedling which originated on Putah Creek. It is quite as early as Briggs' May, and is somewhat larger. If it were not a shy bearer, and liable to sport, in other words, not yet of a fixed type, it would be termed an undoubted acquisition. As it is, it deserves experimenting with. The Waterloo, and Brice's, both of which have received mention heretofore, are being tested in this State, and may possibly fruit next season. We may add, in this connection, that so far all the early peaches known are more or less clingstone in their nature. They are what might truthfully be termed half-clings. Though possessing in some degree the mottled skin, red cheek, and consistency of flesh which pertain to the Rareripe class, and more nearly allied to the free-stones in flavor also, yet the flesh parts from the stone with much difficulty, or not at all. It is clear that we can, in the course of time, much improve our earliest peaches in the directions of size, flavor, and free-stone quality. Let us try, at least. The peach has not yet, as the French express it, "said its last word."

A FINE CHERRY ORCHARD.—Early in May we had the pleasure of visiting the orchards of J. M. Bassford & Sons, near Vacaville, Solano County. It is a beautifully improved and sheltered place, at the head of a ravine, and is fitly named Cherry Glen. How many thousand trees there are in bearing we hardly venture to state, but the Bassfords are so well known as among the leading cherry growers of this State that no mathematics are needed to bolster up their reputation. We saw acres of beautiful trees, well grown, well trained, and loaded with ripe fruit. We saw busy pickers, busy packers, and busy teams. We saw, in this wide, sheltered ravine, and on the lower slopes of the mountains, a fine example of what Anglo-Saxon energy does when it tries to carve out a home. The leading variety grown is the Black Tartarian, for years the standard variety in our markets. Next in popularity comes the Royal Ann, or Napoleon Bigarreau, the Elton, and the Mayduke. All these we observed in full perfection. By this we mean that we wandered slowly and meditatively about the orchard, sampling pretty extensively, and wondering whether Adam and Eve ate cherries. To borrow Dr. Fuller's quaint strawberry remark—"God might have made a better fruit, but He didn't." Of the varieties just named, the Mayduke has the sprightliest flavor, but does not bear carriage so well as the others, nor is it quite as large. The finest early cherry is the Purple Guigne, a variety of quite recent introduction into this State. The soil and climate of Cherry Glen seem unusually well adapted to this variety, and the fruit is larger and the tree a better bearer here than in Alameda County. The cherry trees are trained low, with trunks of not more than two feet in length, and the side buds are

allowed to grow, forming a shelter of sprouts around the trunk. The heads present a very uniform appearance, and are kept cut back evenly on the top, so as not to become unmanageably tall. Walking through the orchard no unhealthy trees are observed; the bark is clean and whole, the leaves fresh and large, the fruit abundant. This season some other orchards in the neighborhood have failed to set fruit. Cherries are not a certain crop anywhere, as there is a critical time just when the blossoms are setting fruit, and a frost just then greatly lessens or ruins the yield. The cherries from this Cherry Glen farm have often been the first in the market, and have proved very profitable. Some other young orchards, both here and in Pleasant Valley, are in fine condition. Mr. Bassford has a very productive young orchard in Napa Valley also.

THE PLEASANT VALLEY ORCHARDS.—During an extended visit to Vaca and Pleasant Valleys, we noticed with much pleasure the care bestowed on the culture and trimming of the orchards. Here are homes which are not for sale; here are lands equal in fertility to any we have seen, and a warm, but healthy climate which enables the fruit-grower to put early fruit into the San Francisco market. The earnest, steady way in which some of the owners here have gone about improving their places, and extending their orchards, is worthy of the highest praise. There is more to be done, of course; only a beginning has been made in the way of gardens and beautiful shrubbery, but that is for the future. We expect within ten years to see some of the most lovely gardens of our State in Pleasant Valley. They must be of the sub-tropical order, however, for the summers are very hot. But we did not mean to whisper gardens; this was to be a pomological note.

Cherries are not largely grown in the upper part of the valley. Early peaches will probably be a specialty with some men. And several hillsides, where it is warmer, are planted with young peach orchards. Rivers' seedlings—the Beatrice, Louise, and Rivers—are discarded, the first being too small and the others too soft for carriage. There was a close pull between Briggs' May and the Alexander, but the latter seems to have the preference, mainly on account of its brilliant color and fine appearance. We did not see any Amsdens. Several orchardists have a bud or so of Waterloo, and we saw one tree which ought to have fruit next year. A good many old trees will be budded over to this promising new variety this fall, so that should it prove an acquisition an orchard will have been started. Among favorite late peaches are Salway, Susquehanna, and Picquet's Late. The Salway has been largely planted. We saw three and four year old trees heavily loaded. Some late clings, both white and yellow, find favor in the markets. The peach-growers here use the utmost care to train up symmetrical trees, and to twin the fruit so well that all the produce is marketable.

ble. Short-trunked, stocky trees, well balanced, and evenly fruited, are the results of their toil. Both peach and apricot trees are continually renewed by cutting a part of the tree back heavily once in eight or ten years, and forming a new head. Young trees of any kind have their trunks protected from the hot sun, the first season, by sacks tied about them. Apricots have been gone into extensively, and with a view to canning and drying. The earliest variety, called here the Pringle, is a small, whitish, cling-stone kind, which often gets into market by the tenth of May. The Royal and the Moorpark are later favorites. The Hemskirke is, however, a better canning apricot.

The Petite Prune D'Agen grows well, and bears heavily. It has been dried and put on the market at a good profit, and is doubtless the "coming prune," unless the "silver prune" of Oregon, of which we have heard so much, should prove a rival. The Fellenberg prune is not a success here, for the fruit does not hold on.

Grapes are in quality superb. The originals of the magnificent plates accompanying the "Grapes of California," which Mr. Bosqui recently published under the auspices of the State Vinicultural Society, were painted here, from fresh clusters gathered daily. Grapes from some of the earliest vineyards are usually shipped East. Nevertheless that insidious destroyer, the Phylloxera, is here, on mischief bent. Some vineyards seem at present entirely free from disease. In others, sad inroads have been made, and portions almost ruined. Little has been done, flooding the vines with water not being practicable, and the sulphuret of carbon too expensive. We will not accuse Pleasant Valley of more than its share of Phylloxera. It exists, although too often unsuspected, in almost every section of the State. We have entered vineyards where the owners thought "nothing was the matter," and found its unmistakable evidences. What are these, you ask? The vine, attacked by countless infinitesimally small insects, begins to yield, the roots decay, vitality lessens, the growth is feeble, and little fruit is set. A few vines in the vineyard look thus, and the next year a few more, at irregular intervals, and so the limitless march of these tiny, but powerful millions, invisible to the naked eye, goes on ceaselessly. That is Phylloxera. And whoever finds a simple, cheap, and efficient preventive, may be reasonably sure of a fortune and no end of badges, medals, decorations, dinners, speeches, and other signs of success.

FRUITING THE AUGINBAUGH BLACKBERRY.—Last month we gathered ripe, large, and appetizing blackberries from a row of Auginbaughs, beside a pleasant farm house in a valley of Solano County. Most of the vines were fruited heavily. We could find no staminate blossoms, although one or two vines were without fruit, and might have fertilized the pistillate vines earlier in the season. The idea was suggested that some of the wild vines might be rooted out of

the creek edge, and their places supplied with Auginbaughs, which being done, we predict that blackberrying will attain a new popularity in that neighborhood. For when this variety does fruit it is uncommonly nice. It is true that almost any ripe blackberry can be eaten. But there is a difference.

THE GROWING INTEREST IN ORANGE TREES.—During this summer we have often been surprised to see how many people had planted out oranges. There are, in Central California, both in valleys and on plains, enough budded oranges now growing, and some of them beginning to fruit, to make oranges cheap and plenty some of these days. One of our friends says that there are enough to carpet the State with orange peel. We hope not, for orange peel is slippery, and medicinal, and not handsome to behold. We rather think that we can persuade some of our Eastern friends to save us from such a mournful climax.

THE MULBERRY.—The mulberry ripens before the strawberry and is desirable on this account. How is it that we so seldom see this fruit cultivated? It is true that the apple season in California meets and overlaps the strawberry season, but we suppose that is no reason we should not have the mulberry to add variety to our tables and mingle with our baked apples and canned fruits.

PROTECTING GRAPES.—W. W. Scarborough, of Cincinnati, has communicated to the Secretary of the Ohio Horticultural Society the following method of protecting and maturing grapes, as used by Mr. Gotlieb of Cincinnati. Just after the young grapes were set, he inclosed 2,500 bunches in bags made of yellow manila paper. The bags were fastened by two or three pins. The cost of the bags, pins, and labor was about one-third of a cent per bag, but on a larger scale would be proportionably less. The advantages claimed, are protection from insects, finer flavor, and immunity from rot. Muslin bags may be used and would do service for several years.

THE AMERICAN POMOLOGICAL SOCIETY.—The American Pomological Society, Marshall P. Wilder, President, will hold its seventeenth annual session at Rochester, New York, commencing Wednesday, September 17th, and continuing three days. All kindred societies are requested to send delegates, and all persons interested in the cultivation of fruit are invited to be present and take part in the proceedings. Specimens of fruit are solicited. Arrangements will be made with hotels and railroads as far as possible. Addresses are promised from such men as Professor Goodale of Harvard, W. C. Barry of Rochester, P. J. Berckmans of Georgia, Thomas Meehan of Philadelphia, etc.

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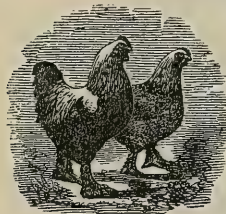
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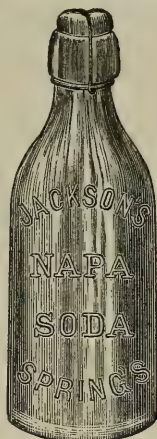
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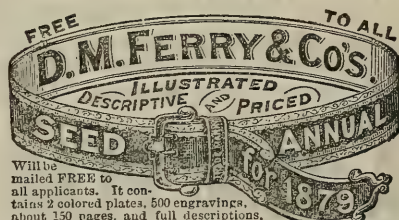
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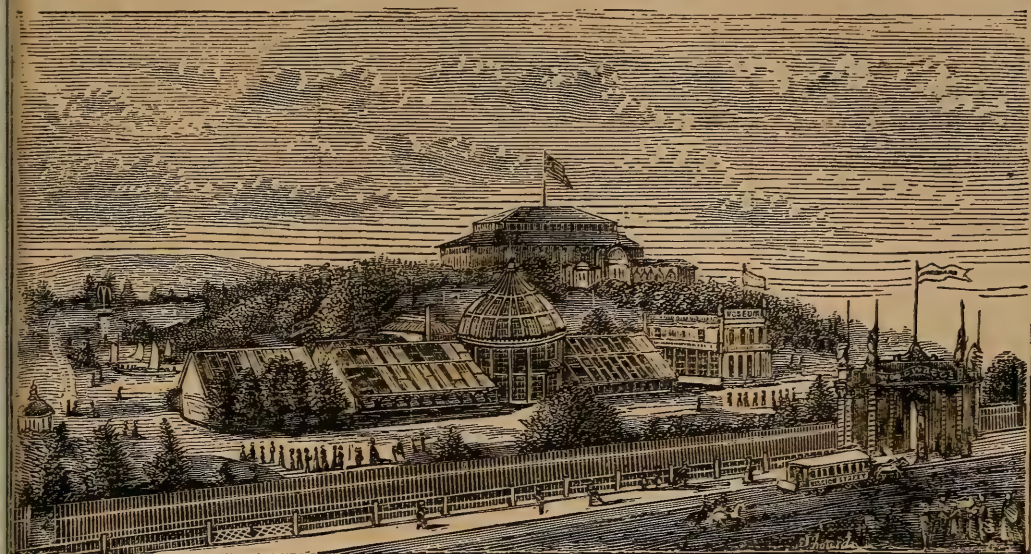
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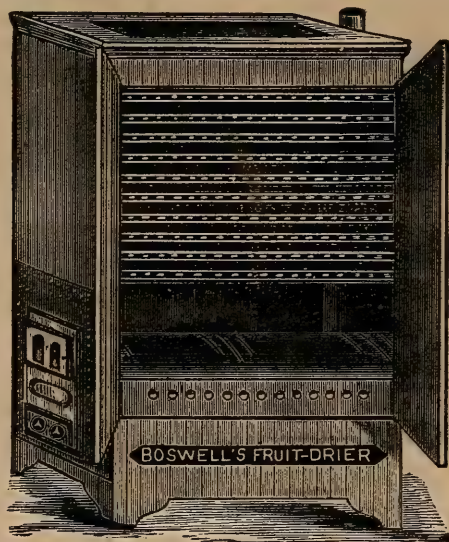
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Vol. IX.

AUGUST, 1879.

No. 8.

THE

California Horticulturalist

AND

Floral Magazine.

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CHARLES H. SHINN, - - - EDITOR.

POST OFFICE ADDRESS—NILES, CAL.

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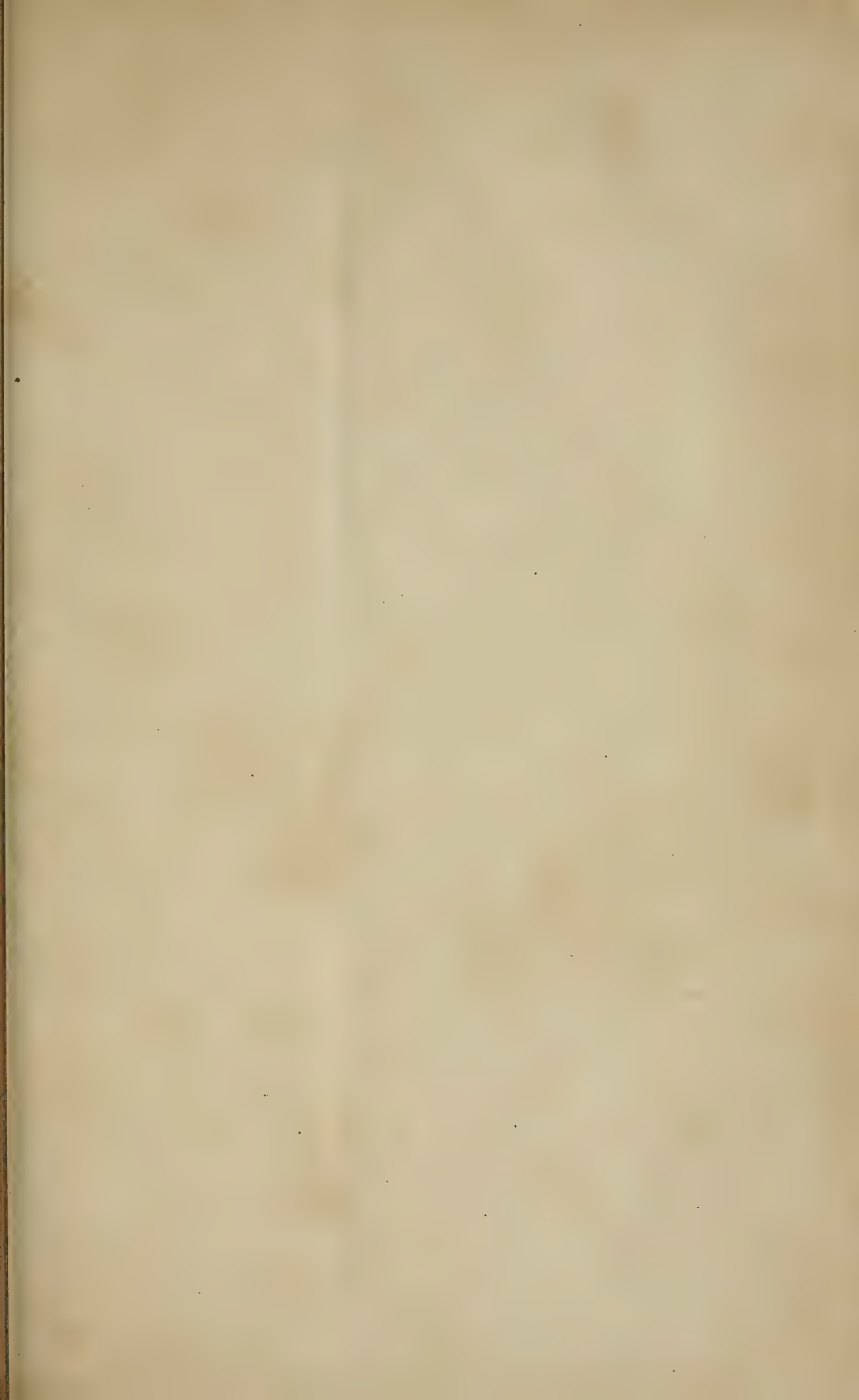
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FLORAL MAGAZINE.

VOL. IX.

SAN FRANCISCO, AUGUST, 1879.

No. 8.

Contributed Articles.

THE LILIES OF JAPAN.

By J. J. JARMAN, Yokohama, Japan.

You asked me if I would not send you a few words about the lilies of Japan. I have been pretty busy lately, and had sickness in my family and could not find time, but will do so now.

First comes *Lilium Auratum*, or as some term it, the Queen of the Lilies, and more term it the Golden Lily of Japan. This is the common wild lily of Japan, and when I first came here in 1864, you could not go out any where in the spring but what you could see this beautiful lily growing in the woods and on the sides of hills. You would find it almost every where you went. You could see it in all its beauty, the stems averaging from three to twelve feet high, and the flowers numbering from three to one hundred and seventy-five on a single stem. I have seen stems more than three inches round them. Sometimes, if the bulb is very old, they will throw up a round stem to about three or four feet, when you will see it commence to get flat, and as the stem grows so it gets wider and wider. I have seen them often as much as six inches wide at the top. The flowers

from these stems far exceed the round stems in number, but not in quality, they being much smaller. There is another beauty about this lily; it is quite hardy and will live through almost any weather; but I would advise those who grow it in very cold parts in open borders, to protect it somewhat from the frosts, or to take it up out of the ground altogether and place it in a flower pot, and put it in any cold place for winter. Your bulb will then be good when you wish to plant it the next spring. I know of no flower, with the exception of the *Olea fragrans*, that has so strong a fragrance as *L. auratum*—the fragrance of the *Olea fragrans* being something like the mignonette, only much stronger.

Lilium Auratum Pictum is a seedling from *L. auratum*, and if you plant a bed of *L. auratum*, you will often find one or two *L. auratum pictum* among them. The flower of this, instead of having a yellow band as in *L. auratum*, has a reddish band about half way down the flower. The growth and habit is just the same as *L. auratum*.

Lilium Rubro-vittatum.—This is a seedling also from *L. auratum*, and it is the prettiest of them all. The flower is as large as the *L. auratum*, and has the same growth in every particular, the difference being in the flower only. In-

stead of the yellow band, as in *L. auratum*, this has a beautiful glossy red band, sometimes with spots and sometimes not.

Lilium Auratum, var. *Varginale*.—Another seedling from *L. auratum*. The flowers are pure white with the exception of the yellow rays, which are unusually brilliant, and a few scattered spots of pale lemon color. This also, like *L. auratum*, is hardy, and if you did not see it in flower and saw this and *L. auratum* growing together you could not tell the difference.

Lilium Black.—This is called the black lily on account of the flowers being nearly black, but to speak the truth the flowers are a very dark purple, with very small yellow stamens. The flowers are small, and I have never seen more than three flowers on a stem, and the stem never more than a foot high.

Lilium Concolor.—This has small star shaped flowers of a light scarlet color, dotted with dark red spots. It is very rarely that you find more than two flowers on a stem, and not more than two feet high. The flowers stand erect.

Lilium Coridium.—This is a seedling from the above, and only differs from it in the color of the flower, which is yellow.

Lilium Cordifolium Giganteum (or *Japonicum*).—I may say here about this bulb, that unless you get very good bulbs, indeed, you can not get them to flower, and the best place to flower them is under shade in a shrubbery, for it does not like the sun. It grows well in a moist stiff soil. The bulb that you plant this spring is not the bulb you dig up in the autumn. The bulb you planted last spring, as soon as the flower stem was out of the ground, had formed its own roots, and the bulb decayed altogether, and about the time of flowering, if you take one up, you will find

that the new bulbs are just forming at the base of the stem. The leaves of this are very much like those of the beet root, but not quite so long, and broader. The first leaves come out at the surface of the ground, and when the stem is about eighteen inches out of the ground it throws a ring of leaves out all around the stem, and out of the centre of these the flower stem grows. The flower stems average in height from five to seven feet, and I have never seen more than eight flowers on one stem, and this was in its wild state. The flower has four petals and is very long; the petals turn out like those of *L. eximium*, but smaller in size. They are of a white creamy color, tinged with a dash of light purple in the two upper petals.

Lilium Japonicum.—This is a beautiful lily, but quite a distinct variety from any of the others. The foliage is thick and stumpy and a darker glossy green than any of the others. The flowers are trumpet-shaped, and measure about six inches in length. They are of a pure creamy-white interior, but sun-painted outside with a rich chocolate brown. This is one of the finest varieties and is well worth having; it attains a height of from three to five feet.

Lilium Kramerii.—This is another very fine variety, and no garden ought to be without it. The flowers are inclined to be long, but not so much as in the preceding one. The flowers of some are a most delicate pink, some are darker, and some are pure white, and some are white with a small tinge of pink. This lily throws up a stem from three to six feet high, and has from four to twenty-five flowers. It thrives in a light, dry peaty soil. It will rot where another bulb will thrive.

Lilium Lichtlinii.—This like the above is one of the best varieties; it has the slenderest stem of any of the lilies for

the height it attains. The flowers are a golden yellow thickly dotted with purple spots. The ends of the petals of the flowers curl backwards on to the stem. The average height is from three to five feet, and it will produce from eight to twelve flowers.

Lilium Longiflorum Eximium is the common long, white, trumpet-shaped flowering lily. They are common, but they make a very good one to mix with others in a bed. They grow from two to four feet high and will produce from five to ten flowers on a stem.

Lilium Longiflorum foliis Albo Marginatis.—This is a seedling from the above and was raised by a Japanese gardener by the name of Chowtarow, it only differing from the preceding one by having a narrow, even, white border round the leaf.

Lilium Martagon.—This is quite a distinct variety from any of the others, the flowers being much smaller, and inclined to curl backwards. They are yellow with dark spots in them. The foliage resembles that of *L. Japonicum*, and will attain the height of from two to five feet, and will produce from six to seven flowers right on the top of the stem.

Lilium Medeoloides.—This is another lily well worth growing, but a very hard one to travel if not properly packed, as the bulbs are formed of small round leaves and if you are not careful in the handling of them they fall to pieces. The leaves are quite different from any of the others as they are formed in circles around the stems. These attain the height of from two to four feet and never throw more than six or eight flowers. The color is orange red with dark spots.

Lilium Speciosum Rubrum.—This is another very fine lily and is well worth cultivation. It is very hardy also. The

flowers are red with a strip of pea green in the interior. The flowers curl backwards; they also have a margin of white and are spotted with red spots.

Lilium Speciosum Album.—This has the same habit in every particular as the preceding one, the only difference being the flowers are a pure white with a small stripe of pea green up the centre. The height of flower stem is from four to six feet, and bears from twenty-five to thirty-five flowers on a stem. These are the two latest to flower.

L. Thunbergianum Flore Pleno.—This is a dwarf, hardy variety, and one of the few double ones. The flowers are a fiery red with dark spots; the outer petals being much larger than the centre ones. Very seldom grows more than eighteen inches high, and never throws more than three or four flowers on a stem. It is one of the first to bloom.

L. Thun. Marmoratum.—This is a single variety of the above. The flowers are a deep orange red, with irregular tawny stains, chiefly at the tips of the petals, giving them a splashed appearance.

L. Thun. Tatzla.—This is another of the above variety, but a little larger in growth. These will grow to the height of four feet sometimes, and will bear five to seven flowers right on the top of the stem; but the flowers are quite separate from one another; that is, they do not touch each other like some kinds. The flowers are a light yellow tinged with pink.

Lilium Thun. Bemy.—This is of the above family, but quite distinct from them in color and foliage; the flowers are a very dark chocolate turning almost to black. The flowers are erect.

Lilium Thun. Alice Wilson.—This is quite a new variety of the above. I sent one bulb of this to London, in

1875. It was sold at auction by mistake to a man by the name of Wilson, who flowered it in 1876 and got it named as above. The flowers are a light orange yellow, and stand erect.

Lilium Tigrinum Flore Pleno.—This is another of the few double varieties, and is one of the latest to flower. The petal decreases in size towards the centre. It is a very robust grower, the flowers are a very fiery red, marked with large purple spots, and it is the finest one among the double varieties.

Lilium T. Splendens.—A single variety of the above, and if anything, a little taller than the above. These two, like *Lilium speciosum rubrum*, and *album*, throw out small bulblets in the apex of the leaf. I would just mention here that *Lilium album* and the *Lilium tigrinum flore pleno* and *Lilium tigrinum splendens* are used by the natives as a vegetable.

I would also add here for the information of those who would like to grow the black lily and *L. Medeoloides* and have not been successful in their attempts, that the *L. Medeoloides* must be grown in a very light peaty mould, mixed with a little sand, and the same with the black lily. The same mould will do, but be sure and not let them get too much water. If you do you will be sure to lose all you have. All the remainder of the *Liliums* are perfectly hardy and will grow in almost any common garden soil, but as I have stated above, where it is very cold it is best to take them up in winter and stow them away in any dry place where it does not freeze. And I would also add, that if you wish for fine flowers, you must use good soil with well rotted manure mixed with it. The black lily should be put in pots not more than six inches deep and about midway in the pot.

HOW TO TREAT PLANTS RECEIVED BY MAIL.

By GUSTAF EISEN, Fresno, Cal.

Some time ago I received a lot of Camelias and Geraniums from a Pennsylvania nursery. Upon opening the package, received by mail, the plants were found to be in a very poor condition, especially the Geraniums. The leaves had all decayed, and the stems had in some places turned black. A lady friend present remarked, "What a pity; they look just like some I received. These are all dead; all mine died except one, and perhaps that one lived only by a chance." Certainly it did live only by a chance, because she put her plants, decaying as they were, directly into her garden, only partly sheltered from wind and sun.

This is the way I treated my plants: After having opened the box, I plunged the plants, moss and all, in tepid water, and after a little while separated them. In a wash-bowl I poured two pints of tepid water and one teaspoonful of pulverized camphor. In this water I submerged the plants for one hour, first taking care to remove all decayed leaves. During this time I spread a layer of wet moss on a newspaper, and sprinkled the moss with two teaspoonsful of pulverized camphor gum. Upon this stratum of moss I opened the Geraniums evenly, and covered them afterwards with wet moss, and on the top spread another sheet of paper. In this bed the plants remained over night. The next morning I potted the plants in 4-inch pots, and kept them in a western window. For a few days they got no sun at all, but afterwards they were freely exposed to the sun in the evening. I watered the pots very sparingly with camphor water, and painted the black places on the stems

with a thick paste of soot and camphor water.

It is three weeks since this operation took place, and all the plants are now leaved out. I did not lose one. Thinking perhaps that some of your many readers may some time get plants by mail in bad condition, I noted down my experience in the matter, and hope it will not be without interest.

The HORTICULTURIST reaches me every month, and I read its contents with great pleasure. If you would like to hear about the superb gardens of Fresno and of my own humble rose garden, I will write you at a future time.

FRESNO, CAL., May 17, 1879.

HOW TO PREVENT APHIS.

By S. M. CURL, M. D., New Zealand.

The communications of correspondents in your admirable periodical show that the woolly aphis (*Eriosoma mali*, of some naturalists), is making its presence in California orchards injuriously conspicuous. As it is well known that this parasite will make profitable apple culture an impossibility in a few years after its invasion, unless energetic steps are taken to eradicate it, it is well to know what means are necessary to accomplish this end.

Some years since I was induced to study the habits of this destructive parasite, and experimented with a view to its extermination. It is important to understand that this parasite has its dwelling place upon all parts of the apple tree attacked; both upon the roots, the trunk and branches, etc. It is at some seasons upon the branches, and at others upon the roots, ascending or descending according to the season of the year, and temperature. It pierces the bark, and extracts the sap, and causes morbid growths to form

upon the parts of the tree it has occupied. If left to continue its ravages, it kills the tree. If temporarily checked, it takes longer to cause the tree's death, in the interim destroying its fruit bearing power. The only way that this parasitical disease can be met and cured, is to provide for its extermination, both on the underground and above ground portions of the apple tree at the same time.

While there was very little difficulty in finding remedies that would kill the parasite upon the portions of the tree that could be got at, it was found impossible to get at them upon the roots, far extending underground, and therefore, after clearing the trunk and branches with the parasitical remedies, they were soon again covered by the migratory hordes that came up from the underground portions, and the work had to be done over again. But continued research and experiment showed that there was one fully effective remedy for this. A kind of apple tree was discovered that was never attacked by this parasite, and under no circumstances would the parasite live upon it. This blight-proof apple tree is named the "Winter Magettin." This Winter Magettin, therefore, being proved "blight proof," was used as stock, and other varieties of apple tree were grafted upon it. It was found that although the tree grown upon the Magettin stock might be covered with blight as far as the Magettin stock, there it was arrested, and was not to be found on the roots or trunk of this stock.

This was the universal experience of all nurserymen whenever the *true* Winter Magettin stock was used, no matter what variety of apple scion was grafted upon it. For Mr. Cole, of Victoria, Australia, a clever horticulturist, and engaged as a gardener, orchardist, and

nurseryman in a very large business in Australia, grafted about eight hundred distinct varieties of apple upon the Winter Magettin stock, and proved that the stock always remained blight proof. So conclusive was the experiment to him, that he at once began to propagate this blight-proof stock very largely, and graft upon them, and send out these blight-proof apples annually in thousands to customers, and in all parts of these Colonies the Winter Magettin stock has remained free from blight.

The Northern Spy and Irish Peach Apple are nearly blight-proof both in root and branch, but the *true* Winter Magettin is never attacked at all, even if surrounded with blight-covered trees. Having, therefore, a blight-proof stock at his command in the Winter Magettin, the apple grower wants some cheap or easily obtainable agent that will kill the woolly aphid upon the upper part of his trees, that shall not be unpleasant to use, that will not injure his trees, and that can be easily applied, and will remain long after as a preventive, so that the trees may not soon again be attacked with the blight. This remedy is found in kerosene, such as is burned in lamps. One part of kerosene, and five parts of some alkaline solution (such as soap suds left after washing clothes), and enough wheat flour added to keep the kerosene suspended, or mixed, applied with a brush to the tree, will effectually remove the blight from the apple tree, and protect it from a fresh infection for a considerable time. Thus is placed within the reach of those who intend to cultivate apple trees a means of keeping them free from this pest, and this most useful fruit can be successfully grown to supply the increasing demand for it.

[We are sure our orchardists and nurserymen will be interested in the

above article. The apple mentioned by Dr. Curl, "Winter Magettin," is described by Downing, in his "Encyclopedia of Fruits of America," as a Norfolk, England, apple. He gives no synonym, and we do not find this variety offered in any of the numerous catalogues which are here. It would doubtless have to be imported.—EDITOR.]

FOUNTAINS AND LILIES.

By MRS. G. E. CHILDS, Sunshine Cottage, Santa Barbara

I want to tell the readers of the HORTICULTURIST about my fountain or miniature pond, where I grow the white water lilies, and I hope I may arouse a desire in others to complete their otherwise fine gardens. A collection of flowers without a waterpiece, is like a song without the words to complete the harmony. I began on a small scale four years ago, but my ambition could not long be confined to a half barrel. It answered the purpose very nicely for one year with earth banked around it, and bits of rock and mossy bark with trailing plants growing about it; then I concluded to construct a larger basin of cement, and had a large, deep hole scooped out and made smooth, then a thick coat of mortar laid against it, and over that a thick layer of water-lime cement. It looked very pretty when finished and the lilies blooming in it, but unfortunately, just as the lilies commenced to bloom the second season, a slight earthquake made a hopeless gap in it, and I had to fill it each day the rest of the year. I found out by that time that to get the most pleasure out of my lilies, two things were necessary: one was to have water pipe in the centre to turn on a spray over the leaves; the other, that it was worth the expense, no matter what it might be, to build a durable, abiding place for my pets, the lilies and gold fishes.

So early in November a mason was set to work with brick and mortar, after the plumber had set the water pipe in the centre. Now I have a fountain with three feet depth of water, built up one foot above water level (also of garden bed level), with a broad flat rim to set vases of plants on. I can turn on the water warm days and let it drip, keeping the fish from getting too warm. A place is provided for water to escape at water level. I regret one thing; I did not have iron brackets set in the brick work to set plants on that need very shallow water. Those in the terra-cotta vases on the rim of the fountain require daily attention. For plants to set on the brackets inside the fountain, the *Russelia juncea*, *Richardia alba*, or spotted *Calla*, *Isolepis gracilis*, and *Cyperus alternifolius* are excellent, as they do not get overgrown or shabby for a long time. For the terra-cotta vases any succulent plants or anything that stands heat and dry atmosphere are best. As my fountain is but six feet in diameter inside, I prefer to have but one variety of plants and see them well displayed, instead of being tangled and crowded, as all water plants increase fast. I had a lovely piece of statuary on a pedestal about two feet above the water, with the pipe through it, but unfortunately some miscreant entered our grounds and utterly demolished it. I shall soon replace it, as it is a fit accompaniment to the lilies. I have heard of the happy possessor of a rose-colored water lily at Grass Valley. I shall try to obtain a root of one, although I prefer the white one (*Nymphaea odorata*) above all. Around and near the fountain I have thrifty trees of orange, lemon, rubber tree, and a crape myrtle, which is twelve feet high, three years old. From the last of June to December, the crape myrtle is one mass of pink crape flow-

ers. I have also a fine specimen of *Brachychiton*, or Australian flame-tree, four years old and eighteen feet high, without leaf or limb until within three feet of the top, where it spreads like an open umbrella. I think it owes its rapid growth to the water that overflows from the fountain, and I find that place an admirable one to start cuttings. I can do so any time of the year with the shade and equal moisture.

For fear that those of moderate incomes will think a fountain beyond their purse, I will tell them how much mine cost, and that I was fortunate enough to sell enough lily roots within three years to cover the expense, and that, all told, was twenty-seven dollars. My parting words are, go thou and do likewise.

STREET AND AVENUE TREES.

By W. B. WEST, Stockton, Cal.

The question, what shall we plant for street and avenue trees, has been discussed somewhat lengthily of late in the *HORTICULTURIST* and other journals, and perhaps some of your readers may be tired of the subject; but it is of so much importance that I can not let it go without a few more words. So much money has been spent for naught, so many mistakes have been made, and so much energy has been misdirected that I hope they will bear with me while I express my views.

The great error made by Californians has been that they were not willing to wait a reasonable time for a tree to develop itself; they wanted something that would grow rapidly, and hence the popularity of the Locust, Poplar, and Blue Gum. This error I think is curing itself; those trees are not planted nearly so much as they were a few years ago. The question now is, what is the

best tree taking everything into account. We do not want a tree that will show signs of decay in the next twenty, thirty, or even fifty years. We want one that will thrive without much care; that will after a few years take care of itself, a tree that is rugged and strong; that will afford shade and shelter, not only to us, but also to those who come after us.

For street purposes the tree ought to be deciduous. Our winters are humid, and we need all the sunlight we have for our houses and surroundings, and then they afford a protection from the summer sun which no evergreen can do. Of course there are exceptional places like San Francisco where it seems to be almost impossible to raise deciduous trees, but as a rule they thrive well almost everywhere. We want a uniform, close growing, round-headed tree, one that will be as free as possible from insect annoyances, one that will thrive in almost any kind of soil, be it adobe, sandy, alkaline, wet or dry—one that will transplant well at a large size, for it is useless to plant a small tree on the street and let it take its chances with animals, and especially boys.

In all the communications that I have seen, the tree that I consider the most desirable has not been mentioned—I refer to the Elm; for I think it is of all trees the most suited to our wants. Although it is indigenous to cold climates it seems to be at home in our hottest valleys; it thrives as well in the warmest portion of the San Joaquin Valley as at San Jose or Oakland; it is as much at home in the adobe of Stockton as in the sandier soil of Fresno. It may not make as rapid a growth during the first few years after transplanting as the Poplar or Locust, but after five years it is usually as large as they are, and from that time it continues to grow

in beauty, while those of more rapid growth show signs of age and decay.

Every town in the State has had its experiences in tree planting, and some of the older ones are in their second or third trial; yet when a new town springs up, they commence just as the old ones have done by planting the most rapid growing ones they can get.

Sacramento planted Cottonwood at first, which were found undesirable, then Lombardy, and Carolina Poplar; now they are planting more Elm and Walnut. But this city has a rich sedimentary soil that will grow anything to perfection, and the problem of shade is easily worked out there. Not so is it with Stockton where they have a tough tenacious clay impregnated with alkali. Locust and Poplars have been planted, but they soon died out, not being able to grow long in such soil. They have been replaced by the Cork-barked Elm. This is the only tree being planted at present, and there are few prettier places than Stockton with its avenues of Elms.

Oakland has the Blue Gum extensively, and is satisfied. Whether it is the taste of its inhabitants, or the enterprise of its nurserymen, I am not informed. It is certainly prettier near the sea than inland.

There are many kinds of Elms on the lists of nurserymen, and they are nearly all good in some places, but are not all good for street planting. Perhaps the best in this State is the Cork-bark Elm, a nice round-headed tree, with large glossy foliage, well able to withstand the heat. The Belgium Elm leaves out earlier in the spring and is a rapid grower; it is in every way desirable. The Huntingdon Elm is a very erect grower, also well suited to our climate. The White American Elm is a fine spreading tree, only suitable for wide

avenues. It takes much time to attain its growth, and therefore is not much planted. In youth its spreading, open top does not add to its beauty; it can not be said to attain the requisite size to show its beauty until at least fifteen years, much too long for our fast country.

There are many other thrifty and valuable varieties suited for avenues, also many kinds for ornamental planting, such as the Purple-leaved Elm, with small purple leaves; the Nettle-leaved Elm, with long serrated leaves; the Aurea and Argentea (gold and silver-leaved Elms), and many others, all of which add to a collection of curious trees. The only objection that I know of against the Elm is the tendency of some kinds to throw up suckers. This is apt to be a serious objection in strong clayey soil. In sandy soils the roots run deeper in the soil.

The value of the Elm in comparison to the Locust is quite conspicuous on a hot afternoon in the summer; the thin pinnate foliage of the latter partially closes, and really affords but little shade. The Lombardy Poplar is too erect for shade, and the Carolina Poplar, unless carefully shortened in, is too open; the leaves of the Blue Gum hang perpendicularly and afford but little shade. The California Walnut is really a fine tree, especially upon sandy soils, but it is difficult to transplant at the size requisite for a street tree. The Linden and Maples are entirely out of the question in a hot dry climate.

In the south of Europe, where avenue and street tree planting is no experiment, they only plant what they know will be suited to the place. The most frequent tree seen is the Oriental Plane, or Sycamore, it is there free from the blight which has ruined the American species, and is a fine lofty tree. The

next is the Elm, which is often seen in Italy, Spain, and the south of France. The most beautiful forest in Spain is that of the Alhambra, at Granada—all Elms. They were presented to the town by the Duke of Wellington. They are planted thickly, and are now about seventy feet in height. The carriage road winds up the steep hill from the city to the Alhambra through this dense wood of Elms, which are kept in vigor by streams of water which flow among them.

A HINT ON ABRONIAS.

By Dr. A. KELLOGG, San Francisco.

As attention is frequently drawn to Abronias of late, perhaps a note of observation may not be amiss. Contrary to the usual opinion given, of planting on sand-mounds, etc., our observation is, that where they grow on drifted sands alone, they throw down roots exceedingly deep—six to ten feet or more, often exhausting themselves thereby, manifested by the meagre tops and few umbels of flowers. Now if any one will take the trouble to examine carefully, the best will be found to grow on stiff black adobe beach, or peaty border marsh muck, or solid loam. I am aware that this idea will strike many of your readers as absurd, ridiculous, and altogether opposed to common observation, etc.; let us be fairly understood as to facts first, then every man may be left to form his own opinions of the *rationale*. Where a mulching of sand—says six to ten inches or so—overlays rich, retentive, moist soils, with a due degree of salt contained in it, the root goes down bodily until it meets this soil, then forks abroad—reacts above, and the creeping vines flourish wonderfully, laden with bounteous clusters of continuous bloom. Another important factor of success is, to avoid top spraying; if drenched

above ground like other plants, it will show surface development, and bide its dry term, or lie dormant expectant of a dry year. Perhaps if sufficient salt were in the water to prevent too rapid evaporation and chill, stimulating withal, it might be more tolerant of moisture on its herbage; for we do sometimes see it on its native shore where the surf spray occasionally moistens the top. It is not a question of survival, but of delight, and most vigorous prosperity.

MEMORIES OF THE SIERRAS.

By CHARLES H. SHINN.

NEVADA COUNTY.

Our notes from San Joaquin and Solano were in the foothills, and over valley and lowland. That placid charm of quiet homes and smiling farms, which constitutes the peculiar attraction of our valley counties, extends in similar measure to the yellow wheat fields of Yolo, Colusa, and Sutter. But the latter days of June, and the earlier days of July, were in that land unpossessed as yet by any sufficient poet; that strong land, from which in the fullness of time there shall be prophets born, and leaders most divine; that lovely land, peopled only in places, where vines cluster, but where otherwise the shaggy peaks still breathe in their own wild way.

The Sierra foothills extend so far from the bases of the real mountains, and the transition is so gradual, that one hardly knows where to say "here the foothills end, here the Sierras begin." But, leaving the sultry town of Marysville, whose brick walls shone through the thick-leaved locusts, we rode southward, into the waste land produced by the debris of the mines. We crossed the Yuba on a long and well-built toll bridge, alive with passing teams and pedestrians. The river, of yellowest

color, flows lazily through a shallow bed, and its course is deflected hither and thither by bars of sand, or by clumps of grass-green willows.

After crossing the bridge, however, we are forced to wind through a strip of waste and ruined territory. For a mile or more, between the river and the upland, is a wilderness of willows, cottonwoods, and whatever else grows in wet sand or mud. Once there were most beautiful and profitable farms here, and extending up the river on either shore, but the constant filling up of the channel, produced by mining on the headwaters of the Yuba and its tributaries, has gradually ruined farm after farm, to the borders of the upland, which, if the process continues, will doubtless be next attacked. This mining debris question is one of which the public will hear much during the next few years—it is destined to be the pivot of much legislation, and will greatly affect our future. In some way damage done must be paid for; but we can not believe that there is any irrevocable declaration of war between farmer and miner. We shall find some honest way out, fair to both parties, and will neither stop our mines, nor ruin our lowlands and rivers.

Eastward, up the Yuba, brings us, in twelve miles, to the low waves of the foothill land. Red, gravelly ridges, treeless, and waste, except for occasional chicken and turkey ranches, and, but rarely, some stunted grain. Once or twice are wayside places tree-embowered, and in some degree bright with flowers. Slowly then, in the warm, bright afternoon, we begin to ascend, along a wide and well-built road, which imperceptibly brings us to the first spicy breath of pines, and the first sight of the miner's toil. At sunset, we reach Timbuctoo, once a large and busy place where several thousands of brawny min-

ers sluiced off the gravel, or swung rockers in the streams, or spent with royal lavishment, the money so easily obtained.

No living man has yet given us more than glimpses of the real miner of '49, the real nature of his toil, the real condition of things in a dead mining camp, such as Timbuctoo. In a basin of the rounded, bushy hills, on the hidden course of some ancient, gold-bearing river, long ago men of the ambitious and tireless type of pioneers, found tiny sparkles, and knew the glitter of gold. At first they secretly toiled for themselves alone, working with feverish haste before others should come. Wild land it was then, and strangely full of fascination. Then others found them, and clustered in the gulches with pick and pan; pitched their tents on narrow ledges; chose a town-site where the hillside had made a faint effort to be smooth and level; sent sawyers and ox-teams into the belts of pine further east, and nearer heaven; built cottages, stores, hotels, school-houses—which were a blessing; built saloons and gambling-hells—which were a curse. The pan gave place to rocker and long tom, and these, in their turn, to black pipes creeping down the hills, and machinery to direct the stream of water against the banks. Through all this the mines grew, gained a greater population, healthy and vigorous, made some rich, who thereafter "went to Frisco" and built marble palaces, or "did Europe;" made some poor, who died forgotten deaths and fill forgotten graves on rain-washed hillsides, or live still, in decaying cabins, which once were houses, and stagnate utterly in a weary, worn out land.

In each decayed mining town, the wide world over, there are men, by courtesy termed living, who blink, and

maunder, and live garrulously in the past; and they live on seemingly forever, in this warm, spicy mountain air, with nights chill enough for comfort, and gracious mornings full of quivering opal hues; they are a friendly, mild-mannered race, who always have time for anything, and have long ago taken from their dictionaries all verbs relating to haste or action or energy. You need not think, however, that in this year of grace 1879, there is any lack of soul-inspiring energy in the real and living mines; but from the worn out villages the ambitious toilers depart. The two classes left are the utter wrecks, which the hard, hot haste, and strong temptations of the mines produce, and also that curious class, not fitted quite for nineteenth century uses, upon whom the spell of this strange land has taken effect. They can not go if they would; they would not go if they could.

An old mining camp, in the growing hours of dusk, has an air of the most peaceful acquiescence with the ways of Providence. There is nothing else like it in the universe. The sleepest fisher-village which ever clung to black cliffs above the lazy breakers and the white shore, will rouse when shoals of her-ring fill the bay, or when the winter storms come with their wild rage, bearing some doomed ship on the foaming rocks; the sleepest village of the valleys grows, though slowly, by increase in value of lands, and the drift of improvements in the community. But the old mining camp is a mystery to the thoughtful inquirer. If a man moves away there his house stands, and rots into a pile of kindling-wood. Yonder was a pretty garden on the slope, but the progress of the mines has cut the water ditches, which now can not reach it, and so it is neglected and barren. Here is a building—solid brick walls,

iron shutters, door which would withstand a siege ; it was a bank once, where exchanges could be had on London, Hamburg, and all the great centres of trade ; now it is plastered over with red paper signs, and occupied by a score of narrow-lidded, yellow Chinese. Yet there are quiet, shaded cottages, and the most lovely of homes in almost every one of these old mining camps. Take a little turn, apart from the decaying business centre of the town, and you will find what would delight the most case-hardened traveler. Quiet men sitting on the doorsteps, and watching that last quiver of sunlight in the pines which is so eternally new and glorious ; fair women in summer garments of white, standing by fragrant pillars of roses ; chubby-faced children, full of healthy merriment, slipping in and out among the trees, or playing on the terraced bit of grass plot beside the grape-trellis. Ah ! we have at last found out the charm of many a mountain town which cynical tourists delight to deny. There are abiding places, and homes of men here also, even as in the fairest of valleys.

The Sierras, as one follows this great artery-like road, make themselves understood by slow elevations. The white peaks of which we wrote while still in the valley, have hid their chill battlements. Occasionally, though, we find a point, near the top of some long grade, from which the peaks towards Truckee rise over blue ranges like vast silver clouds, stained with clear rose, and faint jasmine-yellow. We slowly learn the vital difference between the Coast Range and the Sierras, for in the former the peaks seem cleft almost to the base of the range, and ridges run towards all points of the compass ; in the latter it is as if peaks and ridges rose up from a vast plateau land to which

we climb almost imperceptibly.

As one travels through the mines, the nomenclature of places is a surprise to many. The real wealth of this region in this direction is but slightly developed. The earlier miners had a picturesque habit of naming places, from the first suggestion, or event, connected with it, sometimes in burlesque, but more often in plain, blank, dead earnest. This, though they did not know it, was a vast improvement on the conventional type of names. A few of the noted names in this region are worth recording. A large number of camps were named on account of sect, or race. We have seen Caucasia, Nigger Flat, Kanaka Hill, Malay Camp, and Quaker Hill. Elbow Bar, Garden Valley, Windyville, Sucker Flat, Condemned Bar, Red Dog, Snow-tent Hollow, and similar names, are evidently descriptive. There is, in these mountains, a desolate, rocky, worthless, snake-infested region. No gold was ever found there, and the climate is execrable. With a sarcasm which not even the energetic Ingersoll could rival, this delightful region is known as "*God's Country*." And this was the way it originated : Once, in that dim past of miner tradition, there was a certain plain-spoken fellow living on the borders of this region, then nameless. Being once on a visit to one of the larger mining towns, he yielded to the demands of a social nature (to put it mildly) and became gloriously drunk. Deeply offended by the political sentiments of a boon companion, he leaned forward with true drunken gravity and solemnity of utterance : "I don't want to hear you talk. Do you know who I am ? My name is Bill—Bill Martin—W. B. Martin, if you please, an' I come from God's Country. That's where I live, an' I don't want to hear no such nonsense."

Thenceforward the desolate land received a name. Let no one, however, accuse these rugged miners of sacrilegious intent. Such names as Eden and Paradise had been applied to beautiful spots. Here the sheer incongruity pleased them in a child-like way ; for, indeed, the miners of '49 were men set free from all that is conventional. Loose, in a new world, they lived as in the healthier childhood of the race ; I have no doubt but that Hanno's sailors, or the Carthaginian tin-miners of Cornwall, or the happy-go-lucky crew of Ulysses, would, one and all, have found, could they revisit the brown earth, no more congenial companionship than that of our earlier miners.

Grass Valley, and Nevada City, the chief towns of Nevada County, are interesting and lively places, situated about four miles apart, and connected by the Narrow Gauge Railroad which extends from Colfax, and is a great help to the business of this county. The constantly traveled wagon-road is in splendid condition. Grass Valley, with a population somewhere around seven thousand, is blest with rather more level ground, and consequently with rather wider streets, than is usual in the mines. It is a charming place to one tired of the monotony of checker-board towns on level plains ; it is a place of vines and flowers and trees everywhere. The little gardens, which make fragrant haunts for whole hosts of birds, are of that short-summer type unknown to our valley people, but familiar to our Eastern friends. Hot weather annuals, gorgeously radiant, transplanted mountain lilies, the flowers of our May, June, and July, wrought into one embroidery. In fact the gardens of these mountain counties merit a whole chapter. It is not that they are yet so perfect—they are often only beginnings—but they make

yet clearer that tender-hearted belief that healthy men and women love flowers universally, for their own purifying sakes, and that there is an Age of Flowers, not buried in the past, as sayeth tradition, but awaiting us in the future, as sayeth hope.

Nevada City is mainly built on a sloping hill ; the main streets are planked. Here, too, there is much bloom, and window plants everywhere. South of the town, in full sight, are quartz mills, shafts, windlasses, and unlimited noise and bustle, as also various villainous smells and crawling streams of bluish waste water. The crimes of modern advertisers are shamelessly blazoned on the great gray boulders in the stream as we cross the bridge. When a man curses his country with a new patent medicine it is sad to observe how soon he buys a paint brush and a keg of white lead.

North of Nevada City there is a famous ridge, along which many mines have been and still are productive properties. It extends from North San Juan east, past Cherokee, Columbia Hill, North Bloomfield, and other intermediate towns and camps, to Eureka, where the great reservoirs are situated. Water is brought along the ridge in ditches, and distributed everywhere. It is mostly owned by a company, but there are some few private ditches. The water, so abundant in mining towns, is used on small orchards, grass plats, alfalfa or red clover fields, gardens, and vineyards. Small streams of water run into horse-troughs by the wayside, and drips over the edge ; the dusty street is kept wet and hard, and the floors of saloons and dining rooms are often sprinkled. Nor is it only from these great ditches, fed by far-off mountain streams, that water is obtained. Springs are numerous, and water near the surface. You

need never be thirsty on a mountain road, for every little while one finds a scooped out place in the gravelly bank, or half hid in the bushes, where ice-cold water trickles down, or bubbles up from a crevice, and keeps a square yard of green about it. Almost always there will be a tin can for a cup, hung on a bush, or standing in a narrow niche in the bank, the result, we can easily imagine, of the kindly forethought of some passing teamster. Now, if you will rightly consider, what healthy friendship is herein contained—clear, chill springs every moment, and cups for the public's benefit, with birds moreover, and flowers innumerable, to make the draught better than a comet vintage of the rarest old wine.

The Sierra flowers are now in their prime, and something new meets the eye at every turn, but the lists we make seem cold and formal skeletons of the reality. Penstemons, Gillias, Godetias, numerous representatives of the Labiates and Compositæ, water plants by the springs, great clumps of Azalea and *Styrax* on the slopes, pines and cedars of second growth in masses, with a few giant old trees—this is one of the pictures we shall carry away with us. When we grow more placid we shall botanize; now it is enough to sit on a bed of spicy pine needles, and feel the cool winds blowing from fragrant heights; it quite fills one's mind to see all the flowers which grow happily on even one square rod of ground, without trying at first to name them with exactness. So we gather, and gather, and gather; children do so, and we are glad to be called a child to-day. We think of the lowland cities, and the long monotonous roads, of deep dust, and sweltering heat, and toiling men, and panting machinery. Ah! as we look up, a great yellow mine gleams in a circle of dark

pines towards the south; white, passionately beautiful, a river-like torrent curves and sparkles down the cliff; men crawl like ants in the shadows underneath, and low dull blasts move the air as they break the boulders of rock which clog their path. The valley-world had better make pilgrimages to the mountains every summer; it is a climbing from the realm of the commonplace.

We think of our native bulb, seed, and plant collectors with a renewed pleasure and respect. How pleasant they can make their lives; how their wandering habits must become a part of their natures; with what love they must cherish old flower-friends yearly blooming, springs they have learned to love, pleasant faces in wayside cottages, the murmurs of trout-haunted brooks, and the pulse-quickenings glimpses of the miner's mighty toil. We know a man who puts some dried beef in his pocket, and starts out for a week in the hills as jubilantly as if he were invited to a king's palace.

Whoever rests long in one place, on these slopes, will find more life than he dreams of—or mayhap desires. There are not any very wicked creatures; the grizzly, now rarely seen, is an honest but lumbering old plantigrade, and the rattlesnake does not mean to hunt any one unless trampled on. But the wiggling and creeping hill-creatures are, much to our amusement, gifted with almost human curiosity. Here is an inch-long black ant exploring along the sleeve. Here are inch-long red ants promenading up and down the furrows of an ancient cedar. Here are little chaps bustling about, and evidently wrestling with the bread-and-butter question—that frequent problem of humanity. Any one who is afraid of this sort of thing had better walk on stilts, and dip them in tar every morning. But

there is nothing vicious about these creatures. They are wonderfully at home, to be sure, but, on the whole, they ought to be, and it gives one a sense of infinite pleasure to see how thousands of trees, millions of flowers and grass blades, and myriads of living creatures exist harmoniously on one hillside, swept by long breezes, and filled with the rich call of the crested quail, and the varied notes of woodpecker, oriole, robin, and jay.

The human interest of these mountains is most varied. A large and thriving population is supported by the mines. The hydraulic mines lie along the channels of pre-historic rivers, which lie at levels much higher than the present channels of the modern rivers, and often at right angles. Gold is found in these old river beds, and also in side channels, which once were tributary ravines. In reality only a small portion of the whole surface is gold-bearing gravel. The work being done is, however, stupendous; cliffs three hundred feet high are being torn down by streams of water directed against them. The large resident population required by these operations is only in a slight degree fed by the few farmers in the mountains, so there is constant teaming to and from the adjacent valley counties, wood being taken down, and grain, hay, and vegetables being brought back. This trade is very important, and mutually beneficial. So long as the mines are worked there will continue to be a good market here for those who live near enough to take advantage of it.

MOUNT HOOD.—A recent paper informs us that smoke has lately been seen to issue from Mount Hood. We hope they will not be too proud of having a live volcano.

Correspondence.

[The editor of the CALIFORNIA HORTICULTURIST cordially invites all persons interested in any branch of horticulture to send practical questions and notes of their own successes and failures. A brief, undorned statement of events in one little garden may often prove of universal interest. Short notes from busy people, all over the Coast, will make this Department fresh and valuable.]

QUESTIONS ABOUT APRICOTS, APPLES AND CHERRIES.

EDITOR HORTICULTURIST—Dear Sir: Your magazine is already indispensable, and I will send my subscription to the publishers shortly. I congratulate you on the July number—the best so far.

I write particularly to ask for an article on apricots. There is a prejudice in many places (Riverside and Orange) against the peach root for apricots. They say it does not bear as well, or as regularly, but as their orchards are all young I would like your experience. Also on varieties—the best for canning, the best for bearing, and the most profitable. The Moorpark has been hitherto with me a shy bearer on seven year old trees. But this year they are well filled. Royal is the best bearer. Blenheim and Early Golden, if true to name, do not differ much from Royal, but I suspect the latter are not true, and I have planted new trees from several different nurseries to test them. Peach and Hemskirk have not yet fruited. As the Moorpark's reputation for bearing is poor in many places, your experience is desired.

In apples, in Southern California, we must find and plant the latest good keepers, and many experiments are in progress. The Virginia Greening is the best late keeper, received from Oregon. None fruited here yet.

Have you ever seen the cherry fruited on Mahaleb stock for damp lands. The Duke and Morello classes are fruiting fairly with us on a few trees. Is there

anything better than May Duke? These questions are of course only hints for such articles or paragraphs as seem desirable for you to print, but their answer will also interest many in this section.

Yours respectfully,

ROBERT STRONG.

Westminster, Cal., July 7th, 1879.

[In reply to the queries of our correspondent as above, we remark—that in our experience no objection has been found to the use of peach stock for apricots. All varieties are suitable for canning, except that the Early Golden and the Breda are rather small. Some canning factories object to the Moorpark, that it does not ripen equally—one side remaining quite hard while the opposite side is fully ripe. With respect to fruitfulness, we have found the Royal and the Early Golden very prolific. The Large Early has proved a shy bearer. We have thought the Moorpark a good bearer in most places, but we hear that it does not bear well in Pleasant Valley. We are testing a seedling from Moorpark for which superior bearing qualities are claimed.

We can not commend the Virginia Greening Apple as regards quality, though it is a good keeper.

We are not prepared to say whether the Mahaleb Cherry is more hardy, and better able to resist the effects of damp soil, than the Mazzard. If any of our readers have experience in this matter, we shall be glad to hear from them.—EDITOR.]

SELECTING AVENUE TREES.

EDITOR HORTICULTURIST:—If I might add a word respecting the Riverside Avenue, I would suggest that great care be exercised in selecting varieties, that the rapidity of growth of the various kinds be not very dissimilar. I would also suggest that the trees should be

alternated, which would have a very pleasing effect if the foliage of the varieties chosen contrasted well. For instance, the English and California Black Walnut. Does not the European Horse Chestnut (*Æsculus Hippocastanum*) succeed well in California? It is a most grand and stately tree. If your correspondent of last month means by the California Holly for a hedge the Evergreen Wild Cherry (*Prunus ilicifolia*), I think the selection admirable. I see no reason why it could not be transplanted as any other evergreen, care being taken not to expose the roots at all, and moved when young. But should there be a difficulty of this sort, it is certain that from the seed it grows very readily. By the way, the fruit of *Æsculus Hippocastanum*, long considered poisonous, or at least useless, is found to have been in general use in Switzerland, for many years, as an excellent food for sheep, and is also in France frequently substituted for potatoes and cereals.

LEONARD COATES.

Yountville, Napa Co., June 18th.

[We presume the *Prunus ilicifolia* is the plant intended. It is often called California Holly and in appearance is more like a holly than a cherry, which, however, it is.—EDITOR.]

AGRICULTURAL DEPARTMENT UNIVERSITY OF CALIFORNIA.

EDITOR HORTICULTURIST:—Having occasion to be at Berkeley a short time ago, I was much interested in the experimental department, under the supervision of Mr. Klee, who, among other things, pointed out the Cusco, a species of corn from Peru, of remarkably clean and vigorous growth, and apparently with no inclination to sucker. Quite a large variety of fodder grasses are to be seen, such as Teosinte, Chi-

nese Millet, particularly fine, and the Italian Rye grass. These, with many others, clovers, etc., may be seen raised with and without irrigation, but want of space forbids me from enlarging, or enumerating, and I would only express my unfeigned surprise and regret that the Agricultural Department of the University should suffer from lack of funds. It has already been shown to be of great practical value, but this might be increased a hundred fold if the support were given it which it so justly merits. My particular object in writing is to see if something could not be done through the HORTICULTURIST towards assisting in the establishment of a Botanical Garden at Berkeley. Through the instrumentality of Prof. Hilgard, Botany and Scientific Agriculture have become popular to some extent in this State, but if lasting benefits are to accrue from these experiments, some more substantial pecuniary aid must be forthcoming. I understand the Pharmaceutical Society of San Francisco talk of starting a Botanic Garden at Golden Gate Park. This, it seems, would be a pity, for there will never be interest enough to keep two institutions of the kind afloat in California, and Berkeley is surely the most desirable and practicable location, and the most proper in every sense of the word.

LEONARD COATES.

Yountville, Napa Co., July 2nd.

[We agree with the writer of the above that it is not desirable to attempt two Botanical Gardens, and would add that Berkeley has the advantage in soil and climate, being less exposed to winds.—EDITOR.]

THE CLARE CARNOT ROSE.

EDITOR HORTICULTURIST:—The rose mentioned by Mrs. N. W. Winton, under name of La Nankin, and which has

attracted so much attention at the Santa Barbara Rose Carnival, is evidently not La Nankin at all. Said rose is coppery yellow—not golden yellow—and does not resemble La Jonquil. I think the rose referred to is Clare Carnot. This rose resembles La Jonquil, is more double, and the petals are sometimes lined with white.

GUSTAF EISEN.

Eisen Vineyard, Fresno, June 25th.

THE CINCHONA TREE IN CALIFORNIA.

EDITOR HORTICULTURIST:—Mr. Dorr's article on the desirability of testing the success of the cinchona tree in California is eminently to the point. It is an experiment that ought to have been tried long ago; but the difficulty of obtaining fresh and reliable seed has undoubtedly stood in the way. I am glad to be able to say that through the courtesy of Sir William Robinson, ex-Vice Governor of the Madras Presidency—whose enlightened interest in the progress of agriculture has been instrumental in introducing many important improvements in India—the economic garden of the University received some months ago, among other valuable seeds, five packages of fresh cinchona seeds from India. These represent the species *C. succirubra*, *C. calisaya*, *C. officinalis*, *C. condaminea*, and *C. hybrida*. Of these, the *calisaya* has germinated most readily; but at this time several hundred healthy plants of each of the above are growing in the propagating house of the agricultural department, and new sowings will be made as long as the seed lasts. So soon as the trees shall be sufficiently advanced, they will be distributed to the various sections of the State, where the climate gives promise of success, for trial by careful and competent persons—in accordance with the general policy of this

department—in the carrying out of which the aid and co-operation of all interested in agricultural progress is earnestly invoked.

I regret that the *cinchona pitayensis* is so difficult to obtain, for it certainly seems to be among the most promising species. Yet the accounts received from India and Australia of the success of the other species now in our hands, encourage the belief that some of them will prove hardy, both as regards cold and drought, in the coast region south of San Francisco, and in the more sheltered portions of the bay region. Here the summer fogs, and the uniformity of temperature, seem to present the main conditions known to be requisite for the growth of the *cinchona*, which appears to be a tree of considerable adaptability. What the quality of the bark will be, as to its percentage of quinine, remains to be determined by experience.

E. W. HILGARD.

University of California, July 16th.

THE STRIPED SQUASH BUG, ETC.

EDITOR HORTICULTURIST—Sir: In reference to the mischievous striped squash bug, I would relate my experience. I first found them on my early squash vines. I took ashes and lime and sprinkled them over the vines while the dew was on. It temporarily kept them aloof, but after the sun and wind came up they showed themselves. Second, I took a pailful of water, put in a spoonful of coal oil; sprinkled the same, but with no effect. Then I tried a new mixture—a wash for trees to kill the codling moth—composed of flower of sulphur, 1 pound; fresh lime (in powder), 1 pound; water, 20 pounds. I thought with this fetid smell they would succumb. It did scatter them for a longer period, but they returned and eventually destroyed the vines entirely.

I mixed some strong brine and sprinkled on some young beans, as the bugs commenced their work. Whether by good luck, or their time expiring, I saved the beans and overcome the bugs. Had I any squash vines, would see the effect on them. I find their work on many flowering shrubs, potatoes, leaves of blackberries, etc. It is too bad.

For the benefit of those engaged in tanning business I sent a letter to the Department of Agriculture for seeds, if any on hand. Just received an answer of "none in market," and saying "the plants not being cultivated, but in almost every part of the country it grows wild." I see you published an extract in July number.

The working of the codling moth in some orchards is not so bad as last year. Still they are penetrating other fruits, as the peach and plum.

Keep agitating an horticultural society and we will have it yet. When once formed, a gathering of culturists will designate many ideas not yet gathered through writing, as many will express their thoughts in conversation when they will not by pen.

The remarkably cool season and effect of atmospheric phenomena on plants has been shown in our valley. Many peach trees that never suffered by curled leaf were affected, which many attribute to the late rains, and to the same cause some attribute the light crop of small fruits.

Underground irrigation is still a study for the future. Many ideas are being experimented upon. With small fruit I think a saving of time and expense can be gained. For instance—fine straw in water ditches, or manure mixed, keeps the heat and rays of the sun from baking the surface. At the head ditch place at each opening a board near the bottom, in the centre of which have a

half-inch augur hole with plugs ; thus regulating the flow, besides allowing a larger number of holes open, saturating the mulch, keeping it moist a much longer time, and keeping the growth of weeds down. Shall try it and report. If between every other row you use a small base cultivator, you will keep it moist throughout the season.

I have been so busy I could not write before.

G. RICH.

Sacramento, July 6th.

CULTIVATION OF GINGER.

EDITOR HORTICULTURIST :—I think I am able to give a few hints on the conditions of success in growing ginger in this region from personal observation. Finding a magnificent patch of the plant growing on the premises of Mr. William Meek, of San Lorenzo, Alameda County, I obtained from that gentleman a few roots, which have been carefully nurtured by me for some thirty months. The soil of my own garden is a most uncompromisingly refractory "hill adobe," which settles down into a solid, clammy mass every winter, and can not be worked until late in spring ; if allowed to get in the least too dry, it can be reduced to the semblance of tilth only by something like a sledgehammer. Under all these discouragements, and worried by the direct blasts of the winds sweeping through the Golden Gate, the ginger has nevertheless grown and multiplied very fairly, and is now about to bloom. It has not done as well as at Mr. Meek's, partly no doubt in consequence of exposure to the direct sea breeze, but evidently chiefly on account of the heavy soil. At San Lorenzo it had the advantage of the light and warm sediment soils of that valley, in which the Portuguese grow their biggest onions, such a soil as should, in all cases, be preferred for

root crops. Mr. Meek has now, I believe, banished it from his front garden on account of its spreading too rapidly and crowding out its neighbors. I am not aware that he has ever tried to preserve it, Chinese fashion, but am quite sure he could have done so ; although the Chinese say that the root does not grow as large as in China, and is not as "strong." For most of us, the latter point would be no objection, so far as the preserve is concerned ; but it is probable that, as in the case of other aromatics grown in the coast region, the flavor of the root would not be so fully developed as to enable it to compete with the Jamaican for flavoring extracts or medicinal use. But on irrigated sediment land in the interior counties, it ought to develop its best qualities.

E. W. HILGARD.

University of California, July 16th.

THE BEAUTY OF RURAL LIFE.

We can make our rural home an Eden of beauty and a heaven of happiness if we only use the gifts and privileges within our grasp. The first duty is to establish the principles of rectitude in all our transactions, and affection in all our family relations. Without that bond, an Eden becomes a plague spot, flowers lose their fragrance, fruit its bloom and flavor. First, then, stands pre-eminent the love principles, to insure a true home in its highest significance. Flowers and fruit are sure to follow, as the outward manifestations of the heart's beatings. How they lighten the burdens and cares of life, the eye sparkles in a pleasure far above the cold language of words, when we gaze on the wondrous beauty and delicate tints of a flower, or the splendid varieties of fruit. Kindly words and warm sympathies are engendered by their companionship, and it seems a dreary home

where they are not. It is a grand occupation to care for these useful and ministering angels. Their presence lightens labor and makes the days, months, and years pass away as in a bright dream. Who ever heard of a professional florist committing a flagrant crime? We partake somewhat of our daily surroundings. What better subduer of the passions than beautiful flowers, the fragrance of which is truly elevating as well as pleasing. We must remember that the fairest flower of time is only a faint reflection of immortal flowers which bloom in our spirit home. If they give so much pleasure in our earthly surroundings, do we weary now in gazing at the delicate petals and golden tints portrayed in an endless variety of blooming beauties? Let us love the beautiful, good, and true here, and these virtues shall follow us forever more.

We love the summer's glowing song,
The clear and cloudless skies,
The reaping and the threshing throng,
And smiles from loving eyes.

The harvest fields are broad and grand,
Tis' Labor's sweetest strain
To watch across the smiling land
The ripe, the golden grain.

The garden, too, brings joy at home,
Represses sorrow's sigh!
Its radiant hues where'er we roam,
Reflect an Eden sky.

Ripe fruit and flowers grow for all,
Abundance freely given!
The God of nature hears our call,
And makes our home a heaven.

JOHN TAYLOR.

LEAF CURL.—A writer in the *Country Gentleman*, W. H. White, states that he has examined a great many peach tree leaves that were affected by leaf curl, and has always found insects upon the under side of the leaf. He says that whether they are cause or effect they are always present.

Selected Articles.

CASSAVA.—Cassava is, in our judgment, one of the first products of this State. It is more rapidly planted than potatoes. One person can plant from two to four acres per day, planting same as corn, four by four feet each way, one piece in a hill or drill as desired. It is more easily kept clean when it can be plowed each way. It will produce more per acre than sweet potatoes, and not one-half the labor. Hogs prefer it to the potatoes in its raw state. To a great extent it will take the place of bread; it makes delicious pies, puddings, cakes, custards, etc.; in fact it can be cooked in almost any form desired. As the great cry has been for some product from which we can obtain our supply of meat, we think cassava meets every want. You can leave it in the ground and dig as you need, the roots continuing to grow, affording you food for stock, until your peas and grass are ready for use in the latter part of spring or early summer. Another advantage—you plant the stalk instead of the root, consequently no loss of product. Plant only the matured wood; break in pieces three to six inches long and plant about four inches deep. The root grows mainly in the subsoil. Cultivate level, two plowings being sufficient, unless the ground is very grassy. A very fine starch is made from it, the proportion being about one of starch from four of the raw material. It is superior to corn starch. Much more can be said in its favor, but this is sufficient to induce any one interested to try it.—*Florida Dispatch*.

OSAGE ORANGE LEAVES FOR SILK WORMS.—In the course of the past week we have met with a couple of items of such

possible importance in the future as to impress me forcibly. The one and the minor fact was the statement of Prof. Riley (page 231 current volume), that for the feeding of silk worms there is no appreciable difference between the leaves of the Osage Orange and the mulberry, care being taken to reject the more tender and milky leaves, which are apt to produce flaccidity and disease. Within the last twenty years all Central Illinois has had its fields fenced with Osage Orange, and now the discovery is made that they may become the means of sustaining a new and profitable branch of agricultural industry. Thus, by the introduction of the silk worm, our hedges, which are already valuable possessions as fences, may become doubly valuable in furnishing material for the production of silk, and the labor formerly spent on them to keep them in order, is twice paid for in the value of the foliage for feeding worms.—*Prairie Farmer*.

THE CAMPHOR TREE.—One of the most useful and magnificent productions of the vegetable kingdom that enriches China, and more particularly the Province of Kiang-si and Canton, is the camphor tree. This stupendous laurel, which often adorns the banks of the rivers, was in several places found by Lord Amherst's Embassy above fifty feet high, with its stem twenty feet in circumference. The Chinese themselves affirm that it sometimes attains the height of more than three hundred feet, and a circumference greater than the extended arms of twenty men could embrace.

Camphor is obtained from the branches by steeping them while fresh cut in water for two or three days, and then boiling them till the gum, in the form of white jelly, adheres to a stick which

is constantly used in stirring the branches. To purify it the Chinese take a quantity of finely powdered earth, which they lay at the bottom of a copper basin; over this they place a layer of camphor, and then another layer of earth, and so on until the vessel is nearly filled, the last or topmost layer being of earth. They cover this last layer with the leaves of a plant called po-ho, which seems to be a species of mentha (mint).

They now invert a second basin over the first, and make it air-tight by luting. The whole is then submitted to the action of a regulated fire for a certain length of time. On separating the vessels the camphor is found to have sublimed, and to have adhered to the upper basin. Repetitions of the same process complete its refinement. Besides yielding this valuable ingredient, the camphor tree is one of the principal timber trees of China, and is used for not only in building, but in most articles of furniture. The wood is dry and of light color, and, although light and easy to work, is durable and not liable to be injured by insects.—*Southern Tidings*.

NORTHWESTERN HORTICULTURAL SOCIETY.

—In the *Willamette Farmer* we see a report of the meeting of this society. From that report we extract the following: Mr. Lambert, of Milwaukee, spoke of the interest that attaches to the production of new fruits, and produced some seedling cherries, originated by himself, that he thought worthy of notice. One was the color of Royal Ann and of good size, though not the richest flavor; the other was a black cherry; not quite ripe, but having a good appearance. He said the trees were both hardy and beautiful growers as well as regular bearers, and the important

feature for marketing was that they came early, weeks earlier than Black Republican or Royal Ann, and a few days earlier than the Black Tartarian or Gov. Woods. Its early ripening gives it especial value. The cherries were partaken of with relish and generally approved as worthy of cultivation.

INSECT PEST.—Our Oregon exchanges are talking about an insect that is killing their apple trees. They say it resembles the cabbage lice and has already killed many trees. One man found a few on his trees last year, and without waiting for them to increase and multiply beyond the possibility of coping with them, proceeded to wash the trees with a strong solution of soft soap. The result is that he has had no further trouble. We pronounce him a wise man for taking time by the forelock.

BASIL VINEGAR.—Steep green basil leaves in vinegar—enough to cover them—for ten days, then take them out and add fresh leaves; keep closely corked, and at the end of two weeks strain off the vinegar and bottle for use in soups, sauces, or salads. Other herbs may be prepared in the same manner.

THROUGHOUT France gardening is practically taught in the primary and elementary schools. There are at present 28,000 of these schools, each of which has a garden attached to it, and is under the care of a master capable of imparting a knowledge of the principles of horticulture.—*Exchange.*

QUASSIA.—Quassia and soft soap is recommended for destroying aphides on plants. Boil four ounces quassia chips in one gallon water, cool and add two gallons water and six ounces soft soap. Syringe the bushes well with the mixture.

Editorial Department.

THE PROPOSED HORTICULTURAL SOCIETY.

Since our last editorial on this subject, matters have rapidly come to a focus, and a greater interest than we dared to hope for has been exhibited. We are now able to state that there will be a meeting of the friends of horticulture, either in this city, or in Sacramento, at some date not yet fixed. A "call" signed by some of our representative fruit-growers, nurserymen, and horticulturists, will be issued shortly, and sent to those whom we hope to enlist in our cause, perhaps also printed in the daily and weekly journals.

The time has now come for us to consider what we mean to do—we, the horticulturists of the State. How shall we insure success in this our undertaking? In the first place, we must be economical. Our organization must be on a plain and practical business basis. We want no extravagant admission fees, or monthly dues—merely enough to cover the absolutely necessary expenses. We want no sinecures and no grand flourish of trumpets. With faith, earnestness, and simplicity, we desire to do something towards the coming California of homes, gardens, and orchards. We shall begin in a quiet way. We will not grow tired, for it is too glad a work to be forgotten. Our meetings shall be places where people from all over the State compare their horticultural ideas, and link hands with their brother workers of east and west.

Now, when the "call" is given, please be ready to attend. Send a postal to the editor, at Niles, to give him your ideas on the subject. Remember that we have new fruits to compare and name, new plants to study, and a world of pleasant work to do.

SEED-SAVING TIME.

It is technically August by the almanac ; it is seed-pod time by the voice of the garden. Go and look at the empty, twisted shells which lately held Pansy seed ; notice the empty *Portulacca* cups whose pointed caps lie on the ground ; shake mournfully the wide open *Larkspur* pods. Of all this the result will assuredly be a decision that it is time to be out and busy.

The first seed which ripens is the best. Notice how much larger the lower flowers and pods are on any spike. The buds at the top had much ado to bloom at all, so much sap was taken by the earlier flowers to develop their seeds, and, although we may mourn in secret over the poor apologies for seeds of these upper blossoms on the spike, we must pick only the best.

Then, we must have some paper boxes, and each kind of seed must be put by itself, and labeled. Seeds must be dried in the shade, where it is warm and dry, not subject to dampness from dews, and in two or three weeks may be put up in a paper. Some people take old newspaper and wrap the seed up in about twenty thicknesses, and tie it about with many loops of white twine. We do not admire that way. Fold the seed up in a square of clean paper, like a *Siedlitz* powder, or get some small druggist envelopes, or buy some regular flower-seed bags.

There are not enough flower seeds sent on missionary work. Do save a few this month, and next month, and so on, all the autumn. Save more than you want. Let them be for the sake of gifts, for tired children, for friends, for visitors, for the acquaintance of a pleasant hour on ferry boat or stage. Suppose that each flower-lover should begin this fall with the first gathered seed, and adopt the habit of carrying a packet

of some kind of flower seed, always ready for gift and blessing. You ride along the dusty road and chance to drop your whip, a chubby-faced boy picks it up with a smile—and you give him a pinch of pansy seed ; you are pleased with the fresh beauty of a child, and, instead of painted candy, you give the folded germs of sweet peas and *petunias* ! To give children candy ruins their stomachs, which is bad ; to give them money for little favors ruins their self respect, which is much worse. But there is wisdom in the seeds, for they will preach, though not prosily, and they will teach more lessons than any system of philosophy. Then suppose you venture some day to give a little seed packet to a tired, a very tired, mother, with a wearily heavy child, and an apathetic look, and this mother had morning-glories beside the rough, splintered porch after that—morning-glories of the very tints she knew in girlhood, before the evil days came. Is it not worth while to try ?

WATER LILIES.

All flowers are beautiful. But there are degrees of excellence even in the blossom-world. Some flowers wither too soon, or die too hard, clinging to the brown stem in limp oppressiveness for hours after their life is gone ; some are too gaudily clad, and thrust themselves upon us with most impolite persistence ; some have ragged, indistinct outlines, or fragrance which is not fragrance. No one wants all the flowers to grow in one garden, any more than we want all the people in a county at one dinner party. Nevertheless, just as there are some folks whom we can not help inviting continually, so there are some flowers which to grow tired of is irrefragable proof of our own narrowness and idiocy. And in every true

garden there should be an abiding place for the lovely water lilies.

The work of preparation involves some care, but after that no bed in the garden is so little trouble, or gives so rich a reward. A place dug out and walled with cement, partly filled with earth, and planted with a few roots of the common pond lily (*Nymphaea odorata*), will prove all that is needed, if only a little water is allowed to trickle in and fill the basin, flowing out again so as to keep it clear and cool. It would, of course, be better to have this hypothetical rock, or cement basin, so arranged on some elevated point that the surplus of water would flow out at the bottom, thus stirring up the water, but a mere tub set under the hydrant will give good results. The best water-lily basin we have yet seen was Mr. Morse's in Grass Valley. The plants were so healthy, and blossomed in such abundance, that it was a real delight to lean over the railing and gaze. Then it was another delight to shut one's eyes and sniff slowly, imagining one's self on a real New England forest pond in midsummer. Why yes, to be sure! this smells exactly as we should suppose the borders of Walden did, in the days of simple-hearted Thoreau. Did you ever pick a half-opened water lily, you gray-haired toiler of half a century? Do you remember how the fingers close half way around the stem, and slip gently down through the warm, still, clear water? Do you remember the fragrant breath stealing out of those waxen petals, so firm and beautiful?

Suppose a man, all of whose senses, instincts, and loves were keen, royal, and untrammelled, were to have lived and wrought many patient years, knowing books, pictures, statuary, trees, birds, and terrestrial flowers, but having never seen a water lily. Suppose that

he at last had followed the wooing winds into the secret-keeping mountains, and found a crystal lake where snow-white lilies floated in spotless, radiant revelation. Are there any words known to mortal tongue quite sufficient for his needs, and how shall he tell the world of the glory he has found?

FOOTHILL HOMES.

The tide of immigration is beginning to flow in upon us with somewhat increased force. We shall probably hear some of our journals declare that "there is no room anywhere," that this is "no State for a poor man," and that, in fine, we are a most forlorn community—all of which beliefs we mildly, but firmly, deny.

During a period of rather more than five months, spent in traveling, on horseback, over the central portions of this great State of ours, we have met three continually recurring surprises—first, the numbers, the vast numbers, of able-bodied boys and men, who are living on our public by means of petty pursuits such as the peddling of cement, pencils, or patent medicines: second, the number of large farms comprising from six hundred acres upwards, generally devoted religiously to wheat, never fertilized, and so being slowly worn out: third, the few, very few, small, home-like places which can be found, the few cottage-like gardens on hill-sides, by running streams. How many times we have seen places where houses might be picturesquely built, where gardens might be planted, where vineyards and orchards would flourish! If we could only interest the right class of people, there are homes for them all. Not, mayhap, to be found without searching, but homes nevertheless, and better homes than the hill lands of half the civilized world have furnished.

There are foothills in our Coast Range embracing every possible character of soil, from sand to black adobe, every variety of timber, from redwood to oak and manzanita. Our Sierra foothills are mainly red soil, though sometimes a rich loam. Here, especially, springs are abundant, and the water is of icy coldness, and of crystal purity.

Time was, not many years ago, when the old mining counties were considered worn out, and fit to emigrate from. One of the most encouraging developments of which we have any knowledge, is in the direction of fruit culture and grape growing in these same old mining regions. The land is cut up into small pieces by ravines and rocks; so much the better, if a man has enough to support a family on. He has no temptations to enlarge his operations; good timber, free firewood, pure water, a glorious climate, soil which will grow the grains and fruits of the temperate zone, and often of the semi-tropical. If young Americans are not willing to accept such a heritage, it is to be hoped that the ghosts of the men who peopled the rugged hills of Vermont will materialize themselves and point the slow finger of scorn at their degenerate posterity.

SMALL FARMS AS AN INVESTMENT.

In times of commercial dullness, when business flags, and sales are lighter than usual, and bills are harder to collect, there is more than one merchant who would be benefited by a calm review of his mistaken investments, and his failure to provide sufficiently against that always possible panic. No man deserves to be credited with the true business faculty who fails to make some investments, not for speculation, but solely on the ground of approximate or absolute safety. By a sort of common

consent United States bonds, and real estate, have taken foremost rank among investments of this nature. But, in looking over the field of real estate, which has many divisions, we are impressed with the belief that the business history of the past twenty years in California proves, beyond question, the great value of small farm investments. We can not call to mind a single fifty acre farm, situated within five or ten miles of any town in any one of our central counties, which has not increased in value in a greater ratio than have large farms. The same fact is observable, but in a greater degree, with tracts of twenty or thirty acres.

Indeed, we know of nothing better, and nothing more profitable in the highest sense of security than this: to purchase as soon as possible a small tract of unimproved land, to beautify it as fast as convenient, to think and speak of it as an ultimate home, and refuge. The best of land must be chosen; climate and water are important considerations; nearness to market, and civilized methods of living need attention. If each business man would make a safe farm investment, renting, or hiring labor done, so as to keep the necessary expenses from being a burden, and also holding it as too sacred a possession to ever be mortgaged or sold, he might find occasion to rejoice, in days of financial wreck, over his anchorage to the homely earth.

OUR NEXT NUMBER.—The September HORTICULTURIST will contain some unusually readable articles, now in type, but unavoidably crowded out of the present issue. Mrs. G. E. Childs, Santa Barbara, has sent us a delightful article on "choice shrubs for the flower garden," and Mr. M. P. Owens of Soquel, gives us some valuable "facts about fruits."

Dr. Yates of Centreville will continue his carefully prepared articles on ferns; Mr. Howatt, and other well known correspondents, will also contribute.

OUR FRONTISPIECE.—We are again indebted to Dewey & Co., of the *Rural*, for the engraving we have used. The Calochortuses, or Mariposas, or butterfly tulips, are a charming family, numbering twenty or more species, of wide range, and great variety in size and hue. A Calochortus, of any species, has a peculiarly scintillant glow all its own, and of which one never grows tired. They all succeed admirably in the garden, and deserve the attention of bulb planters.

Editorial Notes.

OUR RANGE OF CLIMATE.—To-day the clear sunlight fills this rare mountain land, for we write from a sawmill, in the Sierra's royal heart, not far from a mining village, and yet lovely enough for perfect seclusion. Here, flowers which long ago passed out of bloom in the valleys, are just beginning to bud. Here are shyer flowers which only the wilder heights nourish. Here is that rare luxuriance of intermingling trees, vines, shrubs, trailers, and lesser plants, which only the mountains can display. And it is the earlier summer here; the flush of spring has hardly faded; the grasses are yet green, and the glisten is not yet quite out of the butterflies' wings. We think of the valley gardens of later July and earlier August, and wonder how the fit word may be rightly said for both. The realm of our work climbs from sea shore to snow line, and reaches from Goose Lake to the Gulf of California. And we never, until this summer, understood exactly how much that means.

Now here, close by the porch, are thrifty Balsams in a box, but they will be, in point of blooming, fully two months later than if sown at the same date at Marysville. Here are Fuchsias which need a hard struggle each winter to get them through safely, and, since they have to take a fresh start each spring, they look almost like a March San Francisco Fuchsia started from an October cutting. A few buds show—there will be plenty of others later; but Fuchsias were pyramids of bloom all winter near the bay. A few observations and comparisons of this sort will soon make one feel that it is rather a risky venture to make floral literature fit our whole State at once. California will never have a Garden Calendar. Perhaps it is better so.

A PRETTY GOOD ROOT STORY.—Mr. Silas Briggs, of Yuba City, showed us a root which he cut from a seven-year old black walnut tree which was washed out by a freshet last year. This root was, at the largest end, about one and a half inches in diameter, and measured over forty-eight feet long. It terminated so abruptly, that we may safely calculate for ten or fifteen feet more, could the root have been lifted out intact. What a curious sight it would be could one see the roots of such a tree all perfect, and what an instance this is of a tree's wonderful reaching-out power. The location being moist, this tree's roots ran near the surface, but no one can doubt that they would, in drier soil, have extended an equal distance down.

THE PENSTEMONS.—What we have seen this summer of the wild Penstemons, on hillside and rock, convinces us that all the different species merit wide favor in our gardens. In point of healthiness and capacity to endure the hot sun, as also in brilliancy, and continuous blooming power, it certainly holds a leading place among those garden perennials which have flowers arranged in clusters, umbels, or spikes. The large hybrid Penstemons are glorious; yet we know of no collection on this coast, and of but few single plants. The flowers are Gloxinia-like, and have nearly as much variety in shade and markings as the best of Gloxinias, though they are considerably smaller, and are differently arranged.

NEW PROCESS FOR THE PROTECTION OF IRON SURFACES.—The *Popular Science Monthly* tells of a new invention by which this may be accomplished. The objects of either cast or wrought iron are coated with a composition of borate of lead, oxide of copper, and spirits of turpentine. When this is dried the objects are passed through a furnace heated from five hundred to seven hundred degrees Fahr., according to the thickness of the articles under treatment, so as to bring them to a cherry-red heat. Articles can be so treated at a cost of about half a cent per superficial square foot. We should think this might be a very useful invention. It would certainly be a boon to the agriculturist if all his tools were rust proof.

ROSE AND CEDAR.—The other day we saw a cedar tree of perhaps four inches diameter, and thirty feet in height. A rose bush had climbed through and over it, and was in full bloom. Long sprays of double pink blossoms drooped as fountains; one bright cluster of roses was higher than the top of the tree. The perfect harmony of the beautiful spire was such that it added a new charm to the modest town. This was at North Bloomfield, Nevada County, and was well worth a long journey to see. In another old mining town we saw a whole hedge of garden roses, left to wander in their own sweet way, and trailing down the face of a rocky cliff, of twenty feet in height, until it was nearly hidden, and prettier than any rockwork we ever saw. Nothing we

can say could accurately describe the luxuriance of these roses, then, in the earlier days of July, a mass of flowers. The water from a hidden spring went trickling down, through grasses and yellow mimulus, so we suppose the rose vines were rooted at every joint, and clinging thus to the crevices between the quartz rocks. Now, all such things are suggestions from infinite nature. Each nook of hillside, or curve of ravine, in the flower-clad Sierras contains somewhere the germs of an added grace for our valley homes. We may see what grows well together; we can find harmonious combinations daily, and groupings worth a careful analysis.

WHAT IS THE REASON ?—This question is suggested most naturally to one looking over the report from the Botanical Garden located in Adelaide, South Australia. Away there, in a portion of the world that we think of as on the borders of civilization, is a garden containing 8,500 rare plants besides the ordinary florists' flowers. The catalogue of these plants printed for the world's fair at Paris occupied nearly 300 pages. They have in their museum about 2,000 specimens besides many not exhibited for want of room. £1,000 was granted them by Parliament for a new building, and £1,210 are to be expended on a bridge in the grounds. And now we come back to our original question. What is the reason that we in California are so shamefully behind far-off Australia? In all this golden State there is no public Botanical Garden. For lack of some such standard authority, the names of plants are, we fear, becoming sadly mixed.

ACACIA.—The bark of some varieties of acacia is used for tanning purposes. The *A. pycnantha*, or, as it is called in Australia, the broad-leaved wattle, is preferred in some places, in others they use the bark of the black wattle, "*Acacia decurrens*," or that of the silver wattle "*A. dealbata*." It is said that it will pay to cultivate the trees for the bark.

SOUTH AUSTRALIA.—We have received from South Australia a report on the progress and condition of the Botanic Garden and Government Plantations for the year 1878. R. Schomburgk is Director. This gentleman has attached to his name innumerable titles, bestowed by various societies in different parts of the world, and we doubt not is worthy of them all. Perhaps the most interesting part of the report to Californians is that in regard to the experiments with reference to grasses. He places first, in ability to withstand drought, the *Panicum spectabile* (Phillips grass). He says: "During the hottest time not a blade withered. When we read that the thermometer reached 113 degrees in the shade, and 166 degrees in the sun, we see that the grass had a severe test. He also speaks highly of the *Bromus inermis*, and *Bromus longifolius*, and has much to say in praise of a new forage plant called *Reana luxurians*, a native of South America. The plant is said to resemble maize or sorghum, but throws out

many stems. It has been described by the *Rural New Yorker*.

A DAMPER ON TEA CULTURE.—There has been a widely prevalent opinion that California would eventually prove adapted to the culture of Tea, and that it would prove to be a profitable commercial venture. No one appears to have hitherto doubted the existence of a sufficient market, and the claim that merely a few labor-saving applications of machinery would enable us to compete with other regions, has not been disputed. On periodic occasions, therefore, the newspapers of the land, when there chanced to be a slight dearth in the usual quantity of news, have gratified and instructed us by the pleasing tale of some one in Arkansas, or West Virginia, or San Diego, who makes his own tea, and drinks it, in tacit rebuke to those who buy theirs. The editor has usually been in the habit of putting in a mild-mannered note asking "why can't we grow our own tea?" But here comes the organ of the India Tea-growers, and spoils this little game. It seems, after all, that even tea-growing may be overdone, and that only level lands, of the best quality, well situated and managed with skill, are considered prudent investments for a tea plantation. If planters, even in India, are advised to be cautious, we need not expect to welcome that new industry very soon.

PLANT-STICKS.—It is one of the first needs of an orderly garden to have the plants kept in neat, trim order, and tied up to stakes or trellises of suitable size. Hardly any one manages a garden in accordance with any particular theory of ought-to-be results, and some of the people who know best that plants need support, are notoriously slow in supplying it. Then, also, when one is overburdened with work which can not be put off or neglected, and only has flowers at all by virtue of an unconquerable, irrepressible affection for them, it is better to somewhat neglect appearances than to let the plants suffer for lack of proper culture. Still, even in such cases, a few plants in perfect health, and full bloom, with every spray watched over, would, perhaps, give more solid comfort than ten times as many only half taken care of. Now, everyone does not know how to make a plant-stick, or how to use it. There is a great difference in the kind of wood which may be chosen. Straight-grained wood must be used. Cedar or redwood is preferable. A very sharp knife is needed. The most suitable stake for ordinary use is tapered towards both ends, but not equally. The largest part should be distant from one end one-fourth or one-fifth of the whole length of the stick. When the stick is thrust into the ground this largest part will be on the surface. In tying the plant to the stick, do not pass the string about both at once, but tie it to the stick first, then tie the plant on. This will, to some extent, lessen the motion and wearing of the plant.

To make and nail together light trellises is simple

and pleasant work. The possible forms vary so much that one's ingenuity may find endless exercise, and fancy of the constructive sort, which leaves visible tokens everywhere, is a very desirable thing to possess. Long, thin brads are much better than nails, and both plant-sticks and trellises need a coating of paint, which adds to their appearance, and makes them last much longer. At one place we lately saw, the long sprouts of fruit trees had been woven into cheap and effective frames to support plants and trellises for vines. This was very much better than nothing.

ONE OF OUR LILIES.—The mountain children whom one meets on their way to school these July mornings, load themselves down with what they call "Tiger Lilies," or, in other words, *Lilium Humboldtii*, whose spires flash out with wonderful brilliancy around the bases of volcanic rocks, or near shattered ledges, or on the hard red clay of the hill-sides. One of our authors, who studies with loving and analytic mind the colors and sounds and meanings of the Sierra woods, has called it "carnelian-hued," with its orange and amber ground, veined with black. In favorable places we have found lily stems as tall as a man. The bulbs are deep down, and not easily dug out. Some insect bores into and ruins many a choice bud. This lily loves company, being always found in groups. Where you see one yellow flash, you may be sure there are others near. After blossoming time is over, the stalks disappear very quickly. By following up the long ridges blossoms may be found in perfection for several months. The same is true of the lovely white lily, *L. Washingtonium*. Both species are in perfection in Nevada County.

THE NEVADA NURSERY.—Mr. Felix Gillet, of Nevada City, deserves credit for the painstaking labor he has bestowed on a hillside nursery where the labor is necessarily all done by hand. The walks and flower beds are edged with slabs of gray stone from the ridges near. Where a boulder was too large to dig out he has made a virtue of necessity, and covered it with shrubs or vines, so it is one of those places which teaches the never too deeply learned lesson of perseverance. Foreign Strawberries, Walnuts, Chestnuts, and other nut-bearing trees are among Mr. Gillet's favorites. He has not forgotten *La Belle France*, as is shown by the many varieties of Apples, Pears, Peaches, Currants, Strawberries, etc., which he has imported from that country. A local nursery is a great benefit to a community, and we wish the Nevada Nursery unlimited success.

MRS. CHILDS' LIST OF SHRUBS.—It is noticeable how many of the shrubs mentioned by Mrs. Childs, as having proved satisfactory, are from Australia. The *Melaleuca*, the *Bursaria*, the *Casuarina*, the *Hardenbergia alba*, and *Grevillea robusta* are all from there. The *Ozothamnus* from Tasmania and

the *Frenela* from New Holland, according to some authorities, according to others from Australia. It forms a division of the Cypress family, and contains about twenty species, some being large trees, some only shrubs. We are surprised to see the *Adiantum Salisburia*, or *Ginkgo*, classed with shrubs. In China and Japan, where it is indigenous, it makes a tree forty to fifty feet high, and has even been known to attain a height of one hundred feet. The *Magnolia grandiflora*, too, becomes in time a large tree. We hope some one will give Mrs. Childs the information she wishes. If she has not the Japan Maples, *Douglas Deutzia*, *Magnolia Halleana*, and *M. Soulangea*, *Crape-Myrtle*, *Smoke tree* (*Rhus Cotinus*), *Escallonia* and *Gardenias*, we would advise her to add them to her collection.

THE SPARROW.—The English sparrow is just now the subject of a great deal of discussion. Introduced into this country under the impression that it would be a valuable help in destroying insects, it has increased so rapidly and proved so destructive to vegetation as to cause great alarm. Dr. Coues, a naturalist, has published an opinion that they should not be protected. This has aroused the ubiquitous Bergh, who has always a good word to say for animals, and he comes out in their defense. We have great respect and admiration for Mr. Bergh, but we are afraid he is protecting a villain this time.

ONE of the reforms most needed in our State is a reform which shall result in a careful saving of everything. A paper read at a meeting of the Philadelphia College of Pharmacy has suggested one possible saving. We quote: "An ordinary orange tree will yield from two to ten pounds of flowers. As soon as the petals begin to fall, a canvas is spread under the tree and by brisk shaking the petals will fall. If some leaves fall they can easily be separated. The flowers are more fragrant early in the morning. From these flowers may be distilled orange flower water." Is there not here a source of income from orange groves that has been overlooked?

CUTTINGS WITH LEAVES.—We have experimented a little upon the new theory of starting cuttings. This is, to bury a part of the leaves under the sand of the cutting bench, so as to prevent evaporation from their surface, while still having the benefit of the leaves to assist in the work the cutting has to do. We are favorably impressed with this new idea.

ACORNS, boiled and mixed with other food, have been successfully used as food for cows.

We see by a letter in *Vick's Monthly*, that certain tree peddlers in Kansas are selling a blue rose, and claim it to be from San Francisco. As no such rose is known here, or anywhere else, it must be put down as only another case of humbug.

THE Coffee tree has borne fruit in Florida.

ASPARAGUS.—C. in *Canada Farmer*, says that after many experiments he has decided that cow manure is far better than any other for asparagus. He says he covers the bed about three inches thick with this manure and finds the result to be a most wonderful growth. We think he is a very sensible person, for he goes on to point out the mistake those make who cut their asparagus while white. It is very strange that any one can be found willing to buy the tough white sticks we so often see offered as asparagus.

BEGONIAS.—These will continue to be prime favorites for the greenhouse and conservatory, because as one gardener expressed it, "They are such grateful plants." He meant to convey the idea that they gave more return for the care bestowed upon them than most plants. The older and better known begonias thrive best when kept from the direct rays of the sun, but the new tuberous-rooted varieties are said to endure the sun, and we have seen it stated that they may be treated just like dahlias. A plate representing some of these is given in the *London Garden* for April 26th. One flower of the variety called Marquis of Salisbury is a rich scarlet and measures four and one half inches one way by three and a half the other. In the same plate is represented a yellow variety called Mrs. Col. Long, and a lovely pink one called Garland. These tuberous-rooted varieties are said to be difficult to propagate. Cuttings having a leaf and part of the stem will sometimes root and grow and even form tubers, but those tubers will not grow the next season. It is only those that have a wood bud that will start. These are found mostly at the base of the stem. It is said to be better, if one wishes to get a supply, to raise them from seed. For the information in regard to these plants we are indebted to the *London Garden*.

CHRYSANTHEMUMS.—If we wish a supply of fine chrysanthemums in the fall, we must not neglect the plants now. There are two entirely different methods of growing, or rather training these. One of these is to pinch off all side shoots, keeping the plant rigidly to a single stem, staking and manuring the plant. The Chinese practice this method and magnificent indeed are the few blossoms they procure from a plant under this method of culture. The other mode of treatment is exactly opposite. It consists in pinching off the end of the top shoot, and when side branches start, pinch off the tips of those. Continue this process and you have a plant with numerous branches and multitudes of flowers.

SWEET PEAS.—If you would keep your sweet peas long in bloom, you must pinch off the blossoms. Don't let them form seed. Fill your vases; send them to your friends; give some to those poor little children whose lives lack the sunshine which glids yours. So shall the lovely blossoms continue to gladden your eyes.

CALIFORNIA FLOWERS.—A gentleman who had traveled in England, remarked that again and again during his travels there, he was taken to see some choice plant, and found it to be some common California wild flower. And well might it be so. Where will you find anything more lovely than our own blue eyed darlings, the *Nemophilas*? or more showy than the *Escholtzia*? We are moved to make these remarks by seeing our wild flowering currant (*Ribes speciosum*) mentioned as one of the most interesting shrubs in flower at Kew Gardens, London. We would like to ask if any garden in California possesses one of these shrubs?

A GRASS VALLEY CONSERVATORY.—We heard there was some one in Grass Valley, Nevada County, who loved ferns, so we instituted a search, and found Mr. S. P. Dorsey's garden on the hillside, looking east over the lovely slopes. We found a whole family of flower-lovers; a bright conservatory where the first glimpse was yellow oranges, and the last was a long pathway lined with great ferns; a garden of home-like beauty sloping to the stone wall by the street, and predominantly roses, with a promise of asters, balsams, etc. Mr. and Mrs. Dorsey pet the conservatory, and, when they take a drive through these glorious mountains, are constantly on the lookout for new plants, bulbs, or ferns, so that they have now some twenty species of native ferns, and we never saw healthier specimens anywhere. There are fuchsias, geraniums, among which we admired "Jewel," and a good miscellaneous display of other plants. Some three or four unusually distinct green-edged petunias, with purple veined centre, won attention. The glass is slipped down during the middle of the day, and an awning used for a few hours.

Pomological Notes.

THE CAPT. JACK STRAWBERRY.—We recently saw this new market berry growing at Silva's Nurseries, Newcastle, Placer County. The system followed might be called the matted bed system—which is similar to the matted row system, only much closer. As it happens, a number of plants were left bedded in closely for the winter sales, and, beginning to grow, it was concluded to let them develop under those new conditions. A tiny stream of water, led along the upper side of the bed, kept it sufficiently wet. The immediate result has been a yield of marketable berries which is, Mr. Silva thinks, unparalleled in his knowledge of the strawberry. No one wishes to seriously recommend planting acres so that the vines are crowded into one mass. But experiments of this sort give us a clearer view of the possible productiveness of a given piece of ground. With attention and high culture we might double or treble our average crops. The Capt. Jack is a slender, pointed berry, firm, but of rather inferior flavor, which, however, does not injure it for market

purposes. We expect to have an article from Mr. Silva himself on this and other strawberries soon.

PLACER FRUIT NOTES.—The Aughinbaugh Blackberry fruits well for one man in the vicinity of Newcastle, but fails with everyone else. Wherever it will do, there it ought to be a good thing for market. Lawton blackberries were ripe, and going to waste in half the canyons we explored in Placer County. There is a section about Ophir and Newcastle which is full of berries of every description. Only a few have the Wilson Blackberry, but we sat down on the lee side of a bush of that variety (the owner was along, fortunately) and we ate all that we could reconcile with our consciences. The Wilson has no hard core like the Lawton, and is a larger and handsomer berry. Then we went into the house and had some blackberries and cream. Then we went down into the cellar and looked at such long rows of shining boxes, ready to be put on the train, that we felt as if we never wanted to taste another.

Black cap raspberries, Philadelphia, and others, are abundant in Placer County. Comparatively few have the fine red varieties. On sidehills of red, volcanic soil, and wet by trickling streams from reservoirs higher up, or led from ditches full of muddy water from the mines, are garden-like patches of small fruits. The crop appears to be very large and fine. Berries are shipped to various points East, and find a ready market. They rarely go to San Francisco from this point.

Fifteen or twenty thousand orange trees were planted out this last winter in this county, and most of them are growing. Some were on orange stock, and some on Chinese Lemon. Placer County has a fine central location to largely control the Eastern shipping trade, and she evidently proposes to do it.

THE NEWCASTLE FRUIT GROWERS' ASSOCIATION.—A couple of weeks ago, or about the 15th of July, we happened into the large, well-lighted business place of this prosperous Association, and chatted with Mr. E. B. Silva, the enterprising and sociable manager. Fruit growers were coming in every moment either to show samples and ask whether it "was ripe enough," or to unload boxes of carefully packed fruit for shipment over the mountains eastward. This Association controls, in a very large measure, the fruit trade of numbers of towns in Nevada and Utah. Later in the season they ship pears and other fruit through to New York. Among the varieties of fruit brought in during this one day we noticed Duane Purple, Washington, and German Prune plums; Tillotson, Strawberry, and Early Crawford peaches; Fall Butter pears; berries in large numbers, and vegetables, such as tomatoes and cucumbers. Indeed the supply of berries was remarkable, and Newcastle may well be called one of the small-fruit centres. The berry season is now nearly over, as far as regards quantity, but enough comes in to show the general nature of the berry

work here. Blackberries of the Lawton and Wilson varieties; strawberries—the Cumberland, Capt. Jack, and others, besides the finely flavored President Wilder for family use; currants are not grown much in this vicinity. The fruit and berry growers all irrigate, buying from the water company. The flavor of their fruit is unsurpassed. These warm hillsides are destined to be famous for the quality of their products, and the fruit interests are looking up. Silva & Son have been the pioneer nurserymen of this section, and Mr. Williamson of Sacramento has recently bought quite a tract here for fruit and nursery purposes. Mr. W. R. Smith, formerly of Davisville, has a charmingly located place here. Mr. Smith has been interested in horticultural pursuits for many years, having known that genial soul, A. J. Downing, and the horticulturists of that awakening period, so dear to us of a younger generation. It was a real treat for us to look over Mr. Smith's horticultural library.

A MEDLAR TREE.—It grows on what until recently was a barren hillside near Nevada City, but is now covered with a garden and a nursery. It is a fine large specimen, heavily fruited, is grafted on the white thorn, called the best stock, quince coming second, and pear third, and, being set where it receives no water, does credit to the real quality of hillside soil. The medlar can not, by any allowable figure of speech, be called queen among fruits. It reminds men of their boyhoods—and it sends us back, with renewed gusto, to autumn apples and grapes. But the tree is not ungraceful, the leaves have a beauty of their own, the late white flowers are choice—really, one medlar tree were not a bad idea.

ENGLISH FILBERTS.—We lately found a mountain home where a group of filberts had been planted in the crevices of a natural heap of rocks, where, taking hold with energy, they formed a charming and fruitful thicket, close-walled enough to make an arbor, or summer retreat. These shrubby trees were probably six or eight years old, and well covered with nuts in clusters of from three to five, or even more. One variety had short husks, merely covering the base of the nut; another kind had long red husks like our wild hazel-nut. The latter variety was of a more upright growth than was the other. Now, we recommend the filbert for clumps of shrubbery, as both ornamental and productive. Our markets are not half supplied; there would be sale for the surplus product. And also, as a nut-bearing tree, its compactness and early bearing qualities make it most desirable.

CODLING MOTH IN FRUIT.—Last month we visited five or six large orchards, and found the codling moth in all but one. Apples were attacked, but not as badly as the pears, which were nearly all on the ground. It is not the loss of one crop, or the ruin of one orchard which would, in the present sur-

plus of fruit, worry us exceedingly. But what of the future? Ten years from now, shall we have any pears; shall we have any apples? Will the yellows attack our peaches, and the curculio massacre our plums and apricots? We confess, frankly, that we do not know of any reason why, when once introduced, they should not. The men who fight these pests from the very beginning, will get a crop when others fail. That is the only consolation, and we shall publish notes on the most successful methods used by Eastern fruit growers.

PORT WINE.—We see it stated in the *Florida Agriculturist* that most of the port wine sold in the United States is made from mulberries.

SCALE.—About two months ago I took some salty grease and stirred in a little flower of sulphur; then took a little mop and rubbed all the parts of my orange trees affected with scale. To my delight the insect soon disappeared, and the trees put out a vigorous young growth.—JOHN W. VEACH, in *South Florida Citizen*.

FRESH FRUIT.—President N. Ohmer, as an illustration of the growing taste for fresh fruit among the people, declares that twenty bushels of strawberries per day would have overstocked the Dayton market twenty years ago, with a population of 15,000; while last season, with a population of 40,000, at least 10,000 bushels were consumed.

New & Desirable Plants.

[We shall glean from our exchanges and correspondence, notes on plants either new, or of promise in our climate. Our nurserymen are invited to send notes on any interesting plants received.]

YELLOW LOBELIA.—A new yellow lobelia is mentioned in the *Gardener's Monthly*, said to be fine for bedding.

CLEMATIS.—The best of the new hybrid Clematises, according to the same authority, are Countess of Lonelace, Fair Rosamond, Miss Bateman, Lady Loudesborough, and Duke of Edinburgh.

THE MUSCARI.—This bulb is better known by its common name, grape hyacinth. A new variety, the Muscari paradoxum, growing nearly a foot high, has been brought from the Caucasus. We see also a white variety spoken of.

At the exhibition of the Royal Horticultural Society, London, May 13th, certificates were awarded to a number of new plants. Of these we note as the most attractive, the Amaryllis, Mrs. Morgan, with large blossoms of a deep rich crimson color, margined with pure white; the Azalea pontica, var. narcissiflora, yellow flowered, with long tubular flowers, re-

sembling the narcissus. There was also a double flowered Begonia, B. Comtesse de Choiseul. A new plant from Asia Minor, a species of Boragewort, called Arnebia echinoides, is described as follows: "Very rare and handsome, perfectly hardy, with dense clusters of funnel-shaped flowers three-fourths of an inch across, bright yellow, with a black spot between each division of the corolla. This spot gradually turns brown and finally disappears." We condense these notes from the *London Garden*.

NEW ALLIUM (*Allium Erdeli*).—This handsome addition to our list of hardy bulbous plants is dwarf in habit, being not more than nine inches high. The leaves are broad and glaucous, produced in a rosette on the surface of the ground. The flower stem is terminated by a dense head of blossoms which are about one inch across, toothed at the edges, and pure white with bright claret-purple tint at the centre. It is a native of Palestine, and of the easiest culture.—*London Garden*.

THE CARNAUBA PALM.—We are not sure of the botanical name of this palm. It probably belongs to the genus *Thrinax*, which is so closely related to the genera *Chamærops* and *Sabal* that science has not established the botanical distinctions. It is a native of Brazil, and its uses are many and various. The wood is very hard, of a yellowish red, traversed by black veins, and susceptible of a fine polish. It is very durable in salt water. From the leaves are made hats, mats, baskets, brooms, and mattresses. Besides these various usages, cottages are thatched with them and cordage made from them. Large quantities of vegetable wax are obtained from the leaves by the simple process of drying them, when the wax falls out in the form of powder. We have obtained some of these facts from the *Florida Agriculturist*.

TYDÆA.—This is a section of the *Achimenes*, and is attracting attention both for the brilliancy of color and free flowering qualities of the plants. There are a number of varieties as the *Uranie*, *Display*, *Fleur de Royat*, *Robert le Diable*, etc. They are easily cultivated.

NEW GRAPE.—In the *Country Gentleman* we find the following description of a new seedling grape, which bears the unique name of Pocklington. The Pocklington is said to be a very hardy grape, resisting mildew fully as well as the Concord. The fruit is a light golden yellow, with light bloom, bunches large, berries round and large, and thickly set. When fully ripe clear, juicy and sweet to the centre, slightly musky.

TOMATOES FROM CUTTINGS.—Tomatoes may be propagated from cuttings. This is a good way to do if you have some especially good variety which you wish to perpetuate. By putting a few cuttings in a

box, and keeping it in a sheltered place during the winter, one may have early tomatoes.

Reviews and Exchanges.

[All books on subjects in any way connected with horticulture will be reviewed in this department. Publishers are requested to state the price of each book sent.]

FORESTS AND FORESTRY.—From S. V. Dorrien we have received a handsome pamphlet on the above subject. It is in the form of a letter addressed to Verplanck Colvin, Esq., Supt. Adirondack Surveys. This letter or essay is divided into three parts: The first treats of the latest experiments and their results respecting the influence of forests on climate. The second of the scientific treatment of forests, and the third of the historical development of forestry. Under the first head is given a summary of the results of five thousand observations made in the kingdom of Bavaria, during the years 1868 to 1872, with the help of instruments most ingeniously constructed for that purpose. The object of these observations was to decide first, the comparative temperature of the soil in the forest and the field. As the result of these observations it was found that the mean annual temperature of the forest soil is, on an average, 21 per cent. lower than that in the open field, and the mean annual temperature of the atmosphere in the forest is on an average 10 per cent. lower than that in the open field. We are told that "the higher the temperature, the more moisture the atmosphere can retain without discharging it in the form of dew, fog, rain, or snow. As a rule the atmosphere never contains as much moisture as it could hold in accordance with the prevailing temperature. The proportion which the moisture actually in existence bears at the same temperature, to that which the atmosphere could hold if fully saturated, is called relative moisture. The observations referred to above, give the relative moisture as, on an average, 6 per cent. greater in the forest than in the field. From these facts we arrive at the conclusion that forests make a climate more humid."

We have only given a meagre abstract of the first part of this treatise. Of the second part we have only room to say that it proposes a most systematic and elaborate system of maps, and laying out of work in planting, caring for, and felling trees in forests. It gives the German plan as applied to districts of from 3,000 to 17,000 acres. The history of forestry in Germany, contained in the last section, is interesting. We extract the following items. In Prussia, between the years 1820 to 1865, the extent of State forests was diminished about 875,000 acres. From 1865 to 1873 it was increased about 75,000 acres. The great importance of State forests is shown by the fact that for the year 1863 Prussia received from this source a net income of \$4,500,000. Would it not be well for our government to utilize

some of its waste lands for forest planting, especially in the prairie States, and so confer a double benefit upon the people by modifying the climate and lessening the taxes?

SPORTSMAN'S GAZETTEER AND GENERAL GUIDE.—Charles Hallock, Esq., who is the author of several books on Field Sports, and the editor and founder of *Forest and Stream*, the well known sportsman's journal, has just issued the fifth edition of his "Sportsman's Gazetteer and General Guide," a most complete encyclopedia of 921 pages. This work is a *vade mecum*, and has become a standard authority on all subjects of which it treats. Besides, it is endorsed by leading scientists. It has already been republished in England, France, and Germany.

"THE BLESSED BEES."—We have received from G. P. Putnam's Sons, 182 Fifth Avenue, New York, a copy of the above book. It has been noticed in these columns before, but we have another word to say about it. We handed it to a gentleman to read last night. He became intensely interested, and when he had finished he exclaimed, "I want my son to read that book, just for the lesson of perseverance it contains." In these days any one who helps to teach that lesson, is a public benefactor, and if to that he adds advice in regard to a business that can be conducted on a small capital, he is doubly a benefactor.

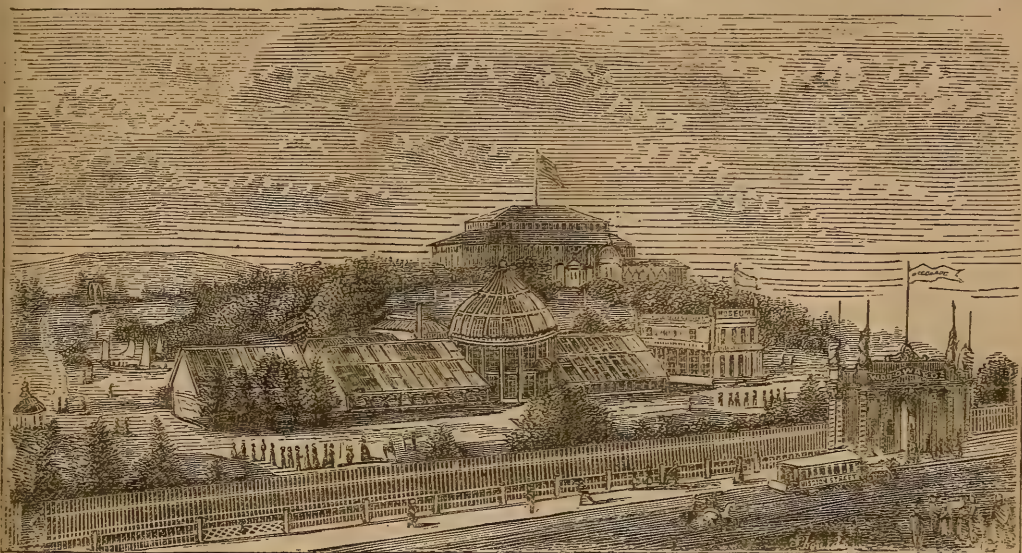
"EMERGENCIES: HOW TO AVOID THEM AND HOW TO MEET THEM." Compiled by Burt G. Wilder, M. D., Prof. of Physiology in Cornell University, etc. Putnam's Sons, New York.

This is one of the most useful things we have seen in a long time. It is not intended to do away with physicians, but to tell us what to do until we can get help. It has a table of poisons, and their antidotes; tells what to do in cases of accidents; advises as to best methods of treating persons who have been in the water; and in short, is full of information.

THE Country Gentleman, of May 15th, has an article giving an account of a new industry, viz: "The raising of Sponges." It has been successfully practiced by Dr. Oscar Schmidt, Prof. of Zoology at the University of Graz. His method is to cut the sponge in pieces, tie it to a pile, and immerse the pile in the sea. At the end of three years the sponge will form a piece valued at about ten cents. His method has been so successful that the Austrian Government is carrying it out on the coast of Dalmatia. Is this new industry to be called horticulture, or stock raising?

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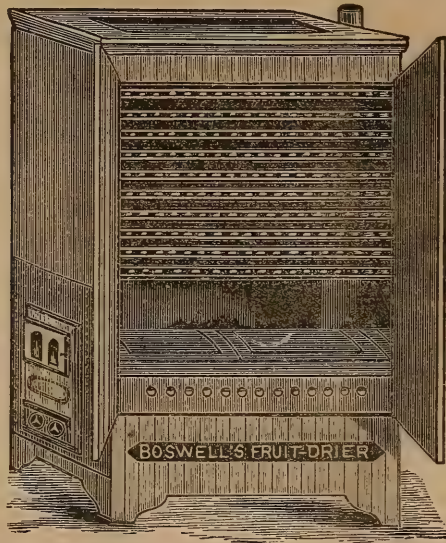
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California Horticulturist

AND

FLORAL MAGAZINE.

VOL. IX.

SAN FRANCISCO, SEPTEMBER, 1879.

No. 9.

Contributed Articles.

HOW TO GROW TUBEROSES.

By G. HOWATT, Placerville.

Having grown tuberoses by the acre, from offsets, and having forced them extensively in greenhouses, in pots, or on benches, and having, whether justly or not, gained the reputation of having won the secret of flowering them successfully, I may be pardoned for a word on the subject. Yet, as it seems to me, I to-day know very little more of tuberoses than does the veriest greenhorn, and I can safely say that no professional florist has escaped the vexations and inconsistencies of tuberose culture, or has ever arrived at a point where he could lay claim to much certain knowledge on the subject.

The trouble with Mr. J. R. is, as you suspect, that he has not removed the side bulblets. Under our system of treating them, we commence in May or June (the exact time depending very much on the locality and season). The ground, at the proper season of planting, must be warm and the danger of frost well past. We prefer a good yellow loam soil, with decomposed cow manure plowed in, for it must be remembered that the tuberose is a gross feeder. Have

a marker with pegs set twelve inches apart; stretch a line tightly, and draw one peg along your line; then the successive rows will be straight. Use a spade and cut down perpendicularly by each mark, so as to plant the offsets six inches deep, and about the same distance apart. Being so slow to start, you may drop a few radish seeds along the row, which will mark it nicely, and furnish radishes for the table before they are in the way of the tuberoses.

For planting in this bed select the smallest offshoots you can, for if large they will probably flower before the season is over, and the object is to produce good large flowering bulbs for the next year's blooming. But if any show signs of blooming they can be dug about, lifted carefully, and put in a pot, where they will expand the whole spike of flowers without trouble.

A tuberose bulb when it has flowered once will not flower again. People seem to misunderstand this so very often that we may be pardoned for stating it. The offsets are ready for bloom after one year's growth, as above described. After flowering place the bulbs in a dry, warm place, not below a temperature of 60°, to be kept through winter. Leave the offsets on the old bulb until the next planting time. In

lifting from the bed, the large bulbs which are to bloom next year, throw them in heaps, cut off the leaves, and put in a dry place; if in the greenhouse, let it be near your heating pipes. For flowering, if you are beginning, you will probably select the largest bulb you can purchase, though it were as large as a Bartlett pear, for you will think it the most likely to flower. But let me say, from practical experience, that a bulb as large as a nutmeg, or smaller, is just as likely to bloom as one of the larger size. It is true enough that the public demand size, however. I have seen Mr. Peter Henderson spend an hour trying to convince a customer that the second and third sizes of well grown tuberose were quite as likely to flower well as were the first size. But it was all to no effect; the amateurs must have the biggest bulbs.

For early flowering, in January we put three bulbs in an eight inch pot. Put them in the warmest place you have, behind the stove if possible. They will stand 100° Fahr. Keep the soil dryish until the green leaves start. Then use all the water they want and they will come on rapidly. Plant outdoors when it becomes warm, for late autumn flowering. Start some in July and August for flowering at Christmas or New Year's. The later ones planted will not need much care, although a little bottom heat will assist in starting them at any season.

After all has been said, they are the "fickle fair ones" of the florist, and nothing now known enables a man to pick out flowering bulbs with absolute certainty, or to insure their success, but when in flower they amply repay all the labor bestowed upon them. We have seen spikes with forty or fifty flowers on them. The tuberose is worth a great deal of trouble to have it in perfection.

CONCERNING PALM TREES.

By JEANNE C. CARR, Pasadena, Cal.

Linnaeus said that man was originally Palmiverous. I believe it, for I notice that even the common forms of Dracænas and Cordylines seem to touch the fibres of memory, the memory perchance of the race to which we specially belong—the race which, born on the Indus, having girdled the earth with its conquests, now sets its flag upon the topmost roof of Lucknow, and makes royalty imperial by its latest act of power. At all events, the English speaking people love the palm. Our Whittier sings:

"The g ft divine

Wherein all uses of man combine—

Food and raiment, and oil, and wine."

I think we in California are rarely fortunate, that having the pines made tributary to us in their noblest forms of beauty and use, we may also cherish so many species of the great palm family.

These thoughts came to me lately under the date palm tree of the old Mission Gabriel, whose long feathery plumes were gilded in the declining heat, and stood out against the quivering blue like the colors of an old painting. This tree is a landmark to the traveler, and a monument to the student of our coast history.

It is very interesting to follow in the footsteps of the original planters of the palm, olive and vine from the crumbling adobes of Old San Diego to the Mission San Jose, reading the successive chapters of the padres' beneficent transformation of wild, and often forbidding, scenery into pastoral plenty and cheerful beauty. I have eaten the same variety of small, sweet pears from trees of their planting at Soledad, Carmel and Santa Clara. The Olivarium at San Diego is still productive, and, like that of Santa Barbara, now furnishes stock for

the modern orchards. In planting the grape of Spain, which their observation had shown them to be the hardiest and most productive, the fathers laid the foundation for our most permanent industry.

But why did they bring these palms with such infinite painstaking across the arid, trackless desert, knowing so well that the marriage of the palm was not likely to be celebrated in the new world for many a century? I think it was because these great fronds, rustling in the wind, were ever repeating to them the sweet story of old, how when the Master entered Jerusalem the disciples spread his pathway with palm branches; and so the palm offered to them a perpetual reminder of the Christian's triumph. The olive and the vine are for delights, the palm is for our spiritual comforting.

Wherever a spring bubbled, and the successive generations of sedges had created the deep black mould which the palm tree loves, the date palm was carefully cultivated by the Mission Fathers. But the coolness of springs appears to have retarded the growth, for the date tree at the foot of the long terrace in the walled garden at San Luis Rey, beside a copious spring, looks stunted, while those in the open, drier grounds at San Diego and San Gabriel are as luxuriant, and compare favorably in size with those of the same age in northern Africa. Heat, therefore, with sufficient moisture, will give us fine specimens of this noble tree, wherever it is secure from frost.

The beautiful and well kept grounds of Col. Bond, of Santa Barbara, offer the most satisfactory studies of various palms that I know of in California. The *Chamærops* sends out its long fans in close proximity to the Filamentous *Pritchardia* of the desert; the *Austra-*

lian *Corypha*, a stiff form, is seen relieved by the springing lightness of the *Seaforthia*, and there is one ten year-old tree of *Oreodoxa regia*, which made me more covetous than I am willing to own. For I was fresh from the reading of Arthur Mangin's "*Gardens*," and who that has seen photographs or pictures of the royal avenue of *Oreodoxas* at Rio de Janeiro, would not covet such a remembrance? The young royalty at San Barbara is true to its kind. "There rises upon the rough part of the trunk a grass-green, smooth, thinner shaft like a column placed upon a column from which the leaf stalks spring;" and when this grand column, like those of Brazil, is seventy feet high, we shall be able to trace the relation of these forms to the prostrate marbles of Palmyra and Greece.

There is an old legend that the palm tree was made from Adam's dust; another, more credible, relates how one of the angels who ministered unto the outcasts from Paradise, carried a palm branch back to heaven, which, planted by the River of the Water of Life, became mother of all the palms which the ransomed shall bear before the celestial throne. This palm grove of the skies is symbolized by the groined vaults, ribbed with ogives, and parted into pendentives in the Gothic cathedrals.

Now that the Isthmus of Darien is to be opened more fully, not only to commerce, but to the botanist and horticulturist, we may expect to obtain many new species of palms.

The *Phytelephas* family, bearing the ivory nuts, have been successfully grown at Kew Gardens and at Vienna, and are found at quite high elevations upon the Darien Mountains. The vegetable marvels of Madagascar can be mostly acclimated in our southern counties. *Livistonias* ought to become common; the

Chilian Jubæa forms small forests where the mean temperature is about that of San Bernardino. The suburban residences of our capitalists will have noble palm houses attached, where the African and Asiatic forms will flourish with those of the West Indies and the Amazon. As the Oratory was found in the grand castles of the middle ages, so our palatial homes may have in a place apart, shielded by a film of glass from frost and wind, something finer than a gallery of art. As Kingsley wrote of the Maximiliana of the Jamaica woods :

"Like a Greek statue in a luxurious drawing room, sharp cut, cold, virginal ; shaming by the grandeur of mere form the voluptuousness of mere color, however rich and harmonious, so stands the palm of the forest, to be worshiped rather than loved."

The fact that one of our great capitalists cheerfully paid \$500 to transfer a couple of fan palms from San Jose to Menlo Park, where they are now rare objects of interest from their size and beauty, proves that we are not extravagant in our expectation of the part which the palms will play in the adornment of California homes.

FACTS ABOUT FRUITS.

By M. P. OWENS, Soquel, Cal.

I like your call for facts on the subject of fruit growing ; because if your correspondents will give facts instead of theory, then we will have something solid to draw conclusions from. So I will give you some facts about some kinds of fruit in this region. Most of the leading varieties of apples do well here—such as Newtown Pippin ; (the best late keeper yet cultivated), Wine-sap, Baldwin, E. Spitzenburg, Y. Bell-flower, W. W. Pearmain, Gravenstein, Alexander, Early Harvest, and Astra-

chan. Most kinds of pears do well here. Pears, such as E. Buerre, W. Nelis, White Doyenne, Seckel, and Bartlett. But one fact about the Winter Nelis is, that the tree grows faster, bears younger, and produces more fruit, and of a better quality, and sells higher in market, than any other pear that grows here. The healthiest and surest bearers among the cherries here, are the red and light colored. The black kinds are not so sure a crop, but all kinds are of excellent flavor ; and all of red, and light colored, that have been tried here, are a sure crop ; and they come into bearing very young.

All kinds of prunes that have been tried here, do well, but the Hungarian, Burgundy, and Quackenboss, are in the lead, and especially the Burgundy, or Petit D'Agen. They are thrifty growing trees, and great bearers ; and the fruit is so nice for canning or drying. The Fellenburg, or German, is another good prune—it is so rich, and takes but little sugar to sweeten it, and they are good bearers, if well cultivated, but if the cultivation is poor, the fruit will be very small, on account of its lateness in ripening, which takes it far into the dry season. But the Hungarian is so large, handsome, and so good a bearer, that we would not do without it, though it is not so rich a prune as the others mentioned. We have not tried many kinds of peaches, and can't say much about them at present, only that nearly all kinds are troubled with "curl leaf" seasons like this. But I am happy to say that there are two kinds that don't curl with me. One is the Briggs' May, and the other is a red peach, that I got for Hale's Early ; but it is not that, and I don't know what it is. But it and the Briggs' May are good bearers, and good as well as handsome peaches. All kinds bear very young

here; most of them are full of fruit at two years old, and it is surprising to see Prunes, Plums, Cherries, and some kinds of Pears bearing so young. I have a good many, that have been set out but two years, that are full of fruit. But the Winter Nelis Pear is ahead of all the pears for early and prolific bearing here. Now as I have been asked by a good many persons, by letter and orally, to give my opinion with regard to what varieties and kinds of fruit are most profitable to cultivate, I will endeavor to gather a few more facts, as the season progresses, and give your readers the benefit of them before it is time to plant trees again. Hoping that what few facts I have given may be of use to some of your readers, I close.

[We can not forbear adding a note to this article, to say how much we thank Mr. Owen for his facts, and to suggest that the publication of statements of this kind, founded on actual experience, is a public benefit.—EDITOR.]

CHOICE SHRUBS FOR THE FLOWER GARDEN.

By MRS. G. E. CHILDS, Santa Barbara.

Will you kindly allow me space to speak of a few choice shrubs that I have? I am still looking for a few more that will give a graceful finish to a garden of roses and other plants that are so particular what companions they have. After a thorough trial I have been obliged to discard several that looked coarse and out of place among the bright blossoms. The *Melaleuca* are handsome, especially *Ericaefolia*. *Bursaria spinosa* is very desirable, with its small, dark evergreen foliage, slender branches, medium height, generally fine contour, and racemes of lovely, fragrant white blossoms, shaped like the old favorite lilac. *Casuarina stricta* is fine also. It needs careful training

when young; its willowy, grass-like branches lengthen out year after year and form into pliant limbs, but always graceful and clean looking. *Salisburia adiantifolia* is one of the finest of the line of shrubs. Its foliage, like an *adiantum* fern, only larger, and a lovely shade of green, its straight, firm shape, and moderate growth, all make it very attractive; it needs care the first two years on account of its fine roots; after they get down deep it grows finely. *Magnolia grandiflora* makes very rapid growth here and blooms when quite young.

Hardenbergia alba is a fine flowering shrub, and comes into bloom just when other white flowers suitable to mix with roses are very scarce. Its long, slender, light green and evergreen foliage seems a little too dense and large for the clusters of lily of valley like flowers, but the profusion of bloom helps to hide the foliage. The shrub needs careful looking after, as it grows too rank, and a slight wind topples it over. It needs plenty of pruning out of old wood, else it becomes poor in bloom.

Ozothamnus diosmaefolia is very little known. I believe mine is the only one yet seen in the vicinity of Santa Barbara. It also needs judicious pruning to get a fine shape. Its heath-like foliage is beautifully variegated from dark green up through shades of bronze and yellow to light canary color. Its dense clusters of pure white paper-like pellets of blossoms at the tip of each twig give it a snowy appearance. It should have partial shade, as the heat and dust soon turn the blossoms brown. If the flowers are cut while fresh, and dried in the house, they are lovely to mix with dried grasses. *Hibiscus grandiflora* and *Hibiscus Cooperii* should also be found in every collection. Nothing

in the range of flowering shrubs can give more satisfaction than the former with its crimson lily-shaped blossoms, and the latter with its richly tinted variegated leaves of pink, cream, and green.

One of the very finest of all evergreen shrubs to place near flowers, is the *Calitris cupressiformis*, or *Frenela cypress*. Mrs. Winton mentioned it in the description of the Rose Carnival as *Fruella*. Very few had ever seen it here before that time. It grows quite large and should be given a generous space to display it to advantage. Its very fine, rich green foliage looks like green silk threads with brown dots of seeds strung on them. *Grevillea robusta* is a fine tree for very large grounds, but ought not to be near the flower borders, as it grows rapidly and necessarily drains a great amount of moisture from the soil, and grows so large as to make considerable shade. It is very graceful and lovely, with its long fern-like leaves tinted from dark silvery green out to the reddish russet brown tips of new growth. It has a neat habit of growth, straight and pyramidal. *Retinospora aurea* is very dainty and pretty, a companion for *Diosma alba*. I have several other very desirable shrubs that are old and well known and found in nearly every garden. Will some one that has tried the following list please report how they like them, or compare them with something well known. They are not to be found here, and if desirable I would like to add them to my garden. *Corynocarpus lævigatus*, *Photinia serrulata*, *Calodendron capensis*, *Calothamnus gracilis* and *Cal. Knightii*, *Roubinia pilcainifolia*, or if there are others not widely known please speak of them also.

In the June number, Mr. Shinn gave us an exquisite bit of word painting about the Gillias, Brodeaes, and Lark-

spurs, in the heart of the San Joaquin. It rested me as if I had been there, and buried my face among the smiling flowers and cool green grasses. We all live too much among people, and too little out of doors. At the time of the Rose Carnival, we found one rose with six names, another with four, and one other with three; it is very vexatious but can not be helped, as I suppose the florists make every effort to send out plants correctly named. The florists of this coast ought to meet and compare collections of roses occasionally.

I want to speak a good word for the *Bouvardias* (a very choice line of flowering plants). I have had *Bouvardia Davidsonia* nearly four years and never saw it without flowers; and at this time of year, it might be called snow plant it is so densely covered with its delicate blossoms. The scarlet variety (*B. leiantha*) is nearly as good a bloomer, except two or three months of the year. They should be in every collection where roses and carnations are. *Bouvardias* are great favorites of mine. After being turned out of the pots into the ground, they must be both shaded and watered well the first season, and after that you have nothing to do for them but cut their lovely blooms year after year.

Lemon verbenas grow into trees here, something the size and shape of apple-trees. We often see them above the roof of a cottage.

I have both varieties of the *Deutzia*, and prize it highly for making up with roses, particularly in plate bouquets and edging for the tazza of epergnes.

The *Spirea* (called here Bridal-wreath), and a large number of other well-known plants, are found here in gardens. There are but few large grounds for display of a variety of fine large shrubs at present, but the fine

homes being built up will soon cause a demand for them.

I did not mention Crape Myrtle among my large shrubs (having spoken of it as being near my pond-lily fountain), but should have done so, as many have an idea it is difficult to grow. It is really the easiest shrub to keep in good growth as well as one of the finest and earliest bloomers. In this climate the Gardenia and Camellia are also at their best. They need careful watching the first year during the dry, warm season; their fine roots need plenty of water and a slight stimulant of soot-water; and the leaves must be kept free of dust and insects. Scale is very liable to attack Gardenias if they happen to get dormant. My Gardenias bloom almost every month in the year, especially the dwarf variety; but I like the blossoms and habit of plant of Gardenia Camelliaeflora best.

The early flowering sorts of Camellias give best satisfaction here, I should say, on account of escaping the heavy rains which cause the petals to decay at the base, and the blossom falls off just when it should expand.

NOTES ON FRUIT CULTURE.

By JAMES SHINN, Niles, Alameda Co.

I do not propose to write a long essay upon the general subject of the culture of fruit on this Coast, important as that interest is, but only to venture a few remarks and suggestions upon one or two phases of the subject. Everyone at all interested in the business of growing fruit, or selling it in our principal markets, must have observed that the supply of good fruit of any of the leading kinds is very irregular. Sometimes the market is overflowing and prices are unsatisfactory, then again, perhaps, good fruit is scarce, and prices are high; but in the latter case the grower can

not obtain the benefit of good prices simply because, in all probability, he has no fruit ready for market. A few days later every orchardist has plenty of ripe fruit and they all send to market at about the same time, so that it is again glutted, and prices undergo another break-down.

Now it is probable that no complete remedy can ever be found for this state of things, but I suggest that something may be accomplished by a judicious selection of varieties, and that in fact nothing else will in any wise ameliorate our condition. Our watchword must be "a wise choice of kinds," and endless study of times of ripening in different localities.

One great error of most planters consists in the too great number of varieties used. A young orchardist will plant a few trees of each of the sorts which he can find in the nursery catalogues, not inquiring whether or not they are adapted to his particular locality, or to the market to be supplied. This course is all wrong, and to this great error may fairly be attributed the constant overplus of inferior fruit in our markets. If none but the very best were grown it would always sell either for immediate use or for canning purposes. From long experience of the markets we can state that they are seldom over-supplied with fruit of the best quality.

The true theory of the orchardist is, therefore, in my opinion, to plant only such varieties of any kind of fruit as are known to succeed well in the locality where it is proposed to plant. Especial reference must also be had to the time of ripening. To illustrate, if the locality is in one of the well-sheltered interior valleys it would be safe and wise to plant extra early sorts, for very early fruit commands good prices with-

out very strict regard to quality. But it would be a very great mistake to grow the very early fruit in any of the more exposed localities near the coast. In all such places the fruit would be ripe just in time to miss the best prices, and to meet in market a better class of fruit from more favored localities, so the only possible results would be loss and disappointment.

I do not mean to be understood as saying that it will be advisable to plant an equal number of each variety; which would probably be a great mistake. Some varieties of pears, plums, peaches, etc., are in greater demand than others for canning, drying, and for shipping abroad. The intelligent planter of an orchard will plant with careful reference to these considerations, always choosing the best varieties and avoiding the error of too large an assortment. It is not perhaps advisable to attempt to give a list of varieties, which, in our wide range of climate, would only be misleading. Local reports from each section of the State are the only proper guide for varieties, times of ripening, and order of succession.

We have never sufficiently estimated the importance of local conditions in fruit culture. Our zones of climate are so curiously intermingled that the two sides of a hill or the two slopes of a valley produce differing results with the same variety of fruit. Whenever an orchardist finds that he beats all his neighbors in the growth of any given variety, he ought to devote more attention to that kind, and build up a reputation for it.

THE Victoria Regia Lily is now in bloom at the Golden Gate Park. Two flowers have opened and two more buds are visible. Large crowds have visited it.

OUR FERNS.

By LORENZO G. YATES, Centreville, Cal.

The tribe of cryptogamous plants known as *Filices*, or Ferns, must necessarily attract the notice and enforce the admiration of lovers of the beautiful in nature, being not only beautiful in themselves, but also adding a peculiar charm to the scenery where they grow.

Many dwellers in our cities, and inhabitants of our villages and other localities where ferns are not found in a state of nature, love to cultivate them, often as remembrances of pleasant excursions to deep and shady cañons where the otherwise rough and unsightly rocks were covered and toned down by carpets and screens of beautiful ferns and mosses, and where hours may be spent in admiring the graceful and delicate forms, the luxuriant growth and the agreeable coloring of the living plants, and in gathering specimens to dry, for home decoration, or for comparison and combination with species from other and perhaps far distant localities.

Nothing in plant growth can be more interesting than to watch the development of ferns in cultivation, the plant sometimes throwing up, almost in a day, fine shoots, which rapidly unfolding the lace like frond, give the observer the result of nature's work, which, though so rapidly disclosed above ground, has taken months of labor for its preparation in the laboratory beneath.

In our day we may enjoy the beauties of the ferns, although they may lack the interest with which they were regarded by our ancestors, arising from the superstitions connected with them. It is now pretty generally known that ferns are flowerless plants, developing their fruit, or seeds, on the leaves.

But less than twenty years ago the inhabitants of many parts of Europe had not forgotten the traditional belief in the mystic powers of fern-seed. In some parts of England there was, and probably is yet, a tradition that the fern blooms and seeds only at twelve o'clock on midsummer night, and that in order to catch the seed, "twelve pewter plates must be used," as the seed would pass through eleven of the plates, but be caught by the twelfth. Nor do our philosophers teach, as formerly, that "demons watch to carry away the fern-seed as it falls, to prevent any person from obtaining it," as it was believed that the possessors of fern-seed were enabled to "walk invisible," which accomplishment the demons, no doubt, were anxious to monopolize for themselves.

Among the ladies of our village are several who cultivate plants, but make no pretension to botanical knowledge. They include among their choice plants many of our native ferns, all of which seem to be doing well under cultivation. One lady (a near neighbor), whose remembrances of fern-collecting in the cañons can not all be of a pleasant nature (she being one of those unfortunate individuals who are susceptible to the ill effects of contact with poison oak), probably derives as much pleasure in the cultivation of our ferns as from the choice flowering plants in her collection.

The following species and varieties of ferns have been found growing within from five to ten miles of this village. None are found growing wild within three or four miles, as it is a level, cultivated valley for that distance, but the ferns begin as soon as we reach the Coast Range foothills toward the east.

POLYPODIUM CALIFORNICUM. Kaulf. Var. *intermedium*.

Polypodium intermedium. H. and A.
Californian Polypody; Liquorice-Root Fern.
(Ferns of N. Am. Pl. XXXI.)

Grows in shady places with other species; also in moss on shaded rocks. Common. Confined to California, mostly near the coast and the islands.

GYMNOGRAMME TRIANGULARIS. Kaulfuss.
Gymnogramme Oregona. Nuttall.
California Gold Fern.
(Ferns of N. Am. Pl. XLVIII.)

This attractive little fern is peculiar to the Pacific Coast, and the only representative of the genus in California. Is considered by collectors in the Eastern States and Europe as a desirable acquisition to the greenhouse, and is more generally admired than any other of "our ferns." Quite common when the conditions are favorable to its growth.

PELLÆA ANDROMEDÆFOLIA. Fee.
Andromeda Cliff Brake.
(Ferns of N. Am. Pl. XXVII.)

Exposed rocky places in the cañons; "also found in Chile and South Africa."
(D. C. Eaton in "Ferns of N. Am.")

PTERIS AQUILINA. L.
Bracken or Eagle Fern.
(Ferns of N. Am. Pl. XXXV.)

Damp hill-sides and near springs, Alameda Cañon. Found also in most regions of the world. NOTE.—Dr. Anderson omits this species in his "Catalogue of California Ferns." (June No. of *HORTICULTURIST*.)

PTERIS AQUILINA, var. *LANUGINOSA*. Bougard.

This variety is found with us on more open ground—in pastures and cultivated fields, in the mountains; also, near the Bay of San Francisco.

ADIANTUM EMARGINATUM. Hooker.
Californian Maiden-Hair.
(Ferns of N. Am. Pl. XXXVIII.)

This is also one of our most attractive species. Found generally in cañons. Has been known heretofore as *A. Chi-*

lense. Prof. Eaton explains this change in nomenclature in his "Ferns of the South-west" and in "Ferns of N. Am."

WOODWARDIA RADICANS, var. AMERICANA.
Hooker.
Chain Fern.

In swampy places on the edges of running water, California; also, found in Mexico and Guatemala. ("Ferns of the South-west.")

ASPIDIUM RIGIDUM. Swartz. Var. ARGUTUM.
D. C. Eaton.
Aspidium argutum. Kaulfuss.
Rigid Wood Fern.
(Ferns of N. Am. Pl. XLVI.)

This Pacific Coast variety of an European species is not uncommon with us.

ASPIDIUM MUNITUM. Kaulfuss.
Chamisso's Shield Fern.
(Ferns of N. Am. Pl. XXV.)

This species is rare in this vicinity, one clump only having been found by the writer in a season's collection. First described by Kaulfuss from specimens collected by Adelbert von Chamisso, who visited San Francisco in 1816.

ASPIDIUM ACULEATUM. Swartz.
Prickly Shield Fern.

This European species (*Polystichum aculeatum* of European writers), is occasionally found in this vicinity, in moist, shady cañons. Heretofore noted only as found (in the United States) in Santa Cruz Mountains and Ukiah (Mendocino County).

One root, or clump, of a very pretty variety of the last named species was found this season, which Prof. Eaton (in Mss.) says is intermediate between his var. *Californicum* and typical *aculeatum*, "rather too deeply cut for the former, and scarcely enough for the latter."

CYSTOPTERIS FRAGILIS. Bernh.
Bladder Fern.

Found only in one locality, in a rough and thickly wooded cañon.

The writer is under obligations to Prof. D. C. Eaton for special favors, and, in common with all, for his "Ferns of North America," now being issued in numbers, a copy of which should be in the possession of every admirer of our ferns.

CENTRAL CALIFORNIA.

By W. A. SAUNDERS, Fresno, Cal.

The geographical centre of California is situated on the plain of the "Great Valley" in Fresno County. This valley begins about fifty miles east of San Francisco, and extends in a southerly direction 250 miles with a width nearly one-third as great. Its surface is entirely level. It reaches away around you like an immense ocean. Its extent is literally inconceivable. We may state its area in thousands of square miles or millions of acres, but we have no conception of what is meant by those enumerated units of measurement. Even after traveling for days through and across it, the traveler fails to fully grasp its magnitude. No person ever sees the Great Valley for the first time without disappointment. It transcends the broadest conceptions that have been formed of its vastness; and then upon mature acquaintance it expands upon the mental vision, grows upon the imagination, filling one with an idea of its immensity like that acquired from long travel upon the ocean. Then it grows in beauty as it expands. An infinite variety of contour and color develops itself in what was at first monotony. The plains have a fascination of their own, like the ocean or the mountains. The traveler who may have been at first wearied with the tiresome uniformity, oppressed with the steady down-pour of summer heat, dazzled by

the glare from white skeletons of grasses or the more gleaming stubble, finds that to the hot noon a cool evening succeeds, and sees the bright rays of the setting sun thrown back from the long eastern horizon of glittering, snow-clad Sierras, while the Coast Range is sharply defined against the brilliantly-colored sunset sky. A miniature world is under his eye at the same moment; he feels himself magnified a hundred fold.

Scattered over the plains are cottages and villages with their silver-gleaming lines of irrigating ditches between green banks of feathery *Erigeron canadensis*; green fields of alfalfa with their sleek grazing herds in the dignified leisure of animal existence; fields of different kinds of grain with every shade of color, from the dark brown of the Sonora wheat to the brilliant green of the waving corn; and dots, clumps, and groves of orchard, shade, and ornamental trees breaking the level horizon of plain in every direction.

"I hear the tread of pioneers,

Of nations yet to be;

The first low wash of waves where soon

Shall roll a human sea."

And while he yet looks, and enjoys, he twilight fades, the smoky-hued, gray wall of darkness narrows his field of vision, and then he feels the ever-occurring, ever-welcome, summer evening breeze. It is the sea breeze that left the ocean side 100 miles away some eight hours before, and in its journey over mountain and valley has parted with its moisture and chilliness, but still retains its vigorating qualities, and under its influence he returns to rest and sleeps the dreamless sleep of health and comfort.

By far the best view, however, is obtained in the early morning before sunrise. The coldness of night has very much condensed the stratum of air

next to the earth, and rarefied that above in a corresponding degree; then, when the early morning rays of the sun shine over our eastern mountain wall, through the thinner upper atmosphere—the lower, dense stratum not feeling its influence—we have that beautiful display of refraction so familiar to every student in philosophy; that blending of rays of light which always occurs when they pass from a rarefied into a more dense medium. This is a phenomenon unknown to the land of our English ancestors, hence the English language is wanting in a name for it; but the French name "mirage" has been universally adopted. Under its influence the valley is spread out like a vast map set in its frame-work of lofty mountains. What was but a general view last night is now vivified with minutia and details, bearing the relation of the elaborately finished picture to the sketch and outline. But my power of description fails. Its grandeur and beauty can never come to you but in the reality. Words are inadequate to the task. It seems almost a mistake to try to put our best thoughts into human language, for when we ascend into the highest regions of emotion and spiritual enjoyment, words are but a mockery.

But the mountains yonder give us a wider horizon, a communion with the clouds, and a change of scenery; thither let us go. We leave the ocean of treeless plains, and travel miles through hills of scattering oak timber, and finally reach the warmest summit, and turn to look at the world beneath us. We look beyond the now familiar scenes of the plains, and see broad Tulare Lake reflecting the heavens from its clear, smooth surface.

Before us, and on either side, the landscape is majestic. Dark, forest-crowned ranges rise one above another,

while above, and scarcely seeming more distant, rise the snow-covered Sierras in brightness of glimmering silver. Not the dull silver of earth, but the bright glow of its burnished magnificence, or the airy, unsubstantial brilliancy of the glorified dream of the alchemists of old.

Just before us, on that low ridge, is the biggest grove of the biggest trees of all of California's giants. We pass on among them. I will not describe them—that has been done so many times. Suffice it to say, that they exceed in size and number the trees of the renowned Calaveras grove. We look at them and wonder that they do not look larger. We walk among them, around them, and they swell and expand on our sight, and we begin to appreciate their immensity. At last they come to exceed all the preconceptions that we had formed of them, and satiate the anticipations that have grown of those conceptions.

A toilsome stretch of mountain travel, which I will not describe, and we reach another and higher summit. Down, far down north of us, and extending many miles away into the dim, billowy distance of mountains to the eastward, is the great King's River Cañon, which from its vastly greater extent, and more sublime scenery, will wrest the palm of grandeur from Yosemite in the near future. No description of it will be here attempted. Sixteen years ago, with an adventurous companion, I explored a portion of it. Since then many persons have visited it, and on returning, though attempting to describe it, have invariably impressed their hearers with the idea that they were making unlimited use of their imaginations.

The loftiest Sierras are before and on either side. A half dozen peaks are in sight, that a position less than half way up any one of whose sides would

enable us to look down upon the summit of Mount Washington were it within the expanse of vision, and Mount Blanc, could it be placed among them, would show but a slightly greater altitude.

Around us the forest trees are bent and crushed by their annual weight of snow, hill-like drifts of which still lie here on the north hillsides and in the cañons. We drink the ice cold water, (that does not express its frigid temperature), take a last look at the surrounding "Switzerland of America," and a single day's travel, aided by gravitation, places us at home again in the Great Valley. We look at the thermometer hanging on the coolest interior wall of our sitting-room and see that it shows a temperature of 95° Fah., and learn that yesterday, while we were among the snow drifts, just yonder in sight, it actually showed a temperature of a hundred degrees.

ACROSS CONTRA COSTA.

By CHARLES H. SHINN.

One sunny morning we turned southward from the land of mines and forests; southward from the region of snow, the shy mountain springs, and the multitudes of flowers. From Grass Valley to Auburn the road passes through a thinly settled region of wooded hills used for pasture, rocky peaks, and slopes of Ceanothus and Manzanita. The spring bulbs were out of bloom; the grass was brown and sere; on a lovely hill towards the west, was a long-bearded, slouch-hatted man, hoisting rock from his shaft, with the aid of a bony, sad-eyed mule.

One after another the typical scenes of the mountains faded; we rode down the long slopes of the Sierras, from ridge to ridge, looking back at the lovely peaks, looking forward to the

great valley, rich with harvests, and filled with a faint, mysterious haze; we rode past the orchards of Newcastle, that pleasant town of the foothills; past the granite-based towns of Penryn and Rocklin, whose quarries are already famous; past Roseville, the junction of the northern line, and, finally, past sleepy stations blinking wearily in the hot midsummer sun. The dome of the Capitol at Sacramento, visible from Newcastle, began to loom up more and more distinctly. We crossed wide pasture lands and desolate plains, but sparsely peopled; next came willow lands, a narrow border of very fertile land, a picturesque old bridge, then the shady streets, and historic buildings of Sacramento.

Afterwards, we crossed into Yolo, and, passing along the western borders of Solano, turned southward again, towards Benicia, along the verges of low, brown hills, and near the immense waste tide lands which lie south of Suisun City towards the bay of the same name.

Benicia is a town where much has happened, and much may possibly happen again. Many of its buildings are too old and woe-begone to look handsome, and it may, very truthfully, be called a breezy place, but there are some handsome gardens there, and some charming people, and, as we said, "great expectations," which, it is to be hoped, will not fail of realization.

From Benicia, you cross the straits of Carquinez on a wheezy, forlorn ferry boat of quite unique pattern, built, we feel certain, in the earlier days of the art. Having been under repairs for an unknown number of years, some portions of the craft display a conglomerate architecture highly creditable to the ingenuity of the owners. The passage across, when the tide is adverse,

is nearly equal in duration to the Oakland ferry. But the boats shortly to be put on this route will effectually remedy the present state of affairs.

There is a town (some of these days we may have to call it a city) which rests, rather sleepily, beside the picturesque straits of Carquinez, and looks across to the slopes of Benicia, and the flag on the hills beyond. Martinez, the county seat of Contra Costa County, is a quiet, delightful town, with much hope about it withal, for it has fairly entered upon its new era of railroads, and begins to speculate about other connections with the towns lying towards the south, in the net-work of valleys which cluster about the dominant peak of Monte Diablo.

The sunset was glorious over the blue and shining hills, of which one never tires, as we rode southward, crossing and recrossing the fringe of trees and vines which marked a modest, hidden stream. Two miles, or thereabouts, from Martinez, the narrow valley divides, and we turn into a sheltered place of orchards, vineyards, and darkening slopes. This is the widely known Alhambra Ranch, where Dr. John Strentzel dispenses hospitality, and lives a busy and useful life among his books, vines, and orange trees. Dr. Strentzel is one of the most ardent and capable horticulturists we have in the State, and has, by his correspondence with societies elsewhere, done much to advance the interests of this coast. The unaffected simplicity and good old-fashioned ways which prevail under this friendly roof-tree, are pleasant to remember.

Osage orange is a success as a hedge plant here; it has not been trimmed overmuch, and its height makes it an added shelter. Besides a long row by the roadside, well loaded with the sham "oranges," there is a nursery of young

plants, near the stream, which are to be planted out this winter on other parts of the ranch.

There are, in the orchard, great blocks of Quince and Pomegranate, the latter in bloom. The fruit trees are looking well, and, as becomes so veteran a pomologist, display an extensive collection of varieties, about some of which we shall want news occasionally. The bearing tree of Japan Persimmon is about twelve feet high, in a very healthy state of growth, and has a medium sized crop this year. We think it is six years old from the seed, and it came into bearing last season.

The orange trees, whose product has been so often spoken of in horticultural journals, are situated immediately in front of the house. There is, on the east side of the stream, a large orangery recently planted out, in the rows between one of the vineyards. The vines will be cut away as soon as necessary, and belts of *Eucalyptus globulus* will be used to protect the orange trees. Warmth, moisture, and some shelter from the hottest sun and winds, are, Dr. Strentzel thinks, the desiderata in orange culture. The leading varieties, such as Mediterranean Sweet, Navel, Maltese Blood, Acapulco, etc., as well as some seedlings of promise, are represented in this orangery.

Near the stream, in places, we noticed that the wild vines had been cut away, and experiments with the hardier grapes of the East were in progress. This we recommend as a good idea. We have, in this State, miles of creek land, miles of winding river borders, miles of narrow ravines, filled up and tangled with wild grape vines whose fruit is worthless for human use. There is not any good reason why they should not be rooted out, and their places supplied with Catawbas, Isabellas, some of Rick-

ett's or Ives' seedlings, and others of the better class of hardy grapes, which will undoubtedly succeed where it is too cold for the foreign varieties. Much the best way would be, however, to graft the desired varieties on the wild grape vines, clearing away the brush sufficiently to let the sunlight in better, and giving the roots cultivation. We hope some person in one of the northern counties will take hold of this matter, and make ready to graft a number of thrifty wild vines during the coming season. Most of our viniculturists are of the opinion that rather late spring grafting succeeds best.

We pass on, southward, through the Pacheco Valley, by many a tree-embowered town, and by pleasant and highly cultivated farms. The streams are well wooded, and we often observe clumps of our California Black Walnut. The main stream of this section is named Walnut Creek on account of the groves of this valuable tree found near its source. Our native walnut is one of the very best trees to withstand the dry atmosphere of our interior valleys. At Mr. Ross's place, near Dixon, we saw a fine grove of this tree, grown from nuts planted where they were to remain, and making an enormous growth without irrigation. We hope to see it eventually take the place of the vile cottonwood with its insects and obnoxious cotton-like substance which blows over everything; indeed we think it is much preferable to the locust, which suckers badly.

The scenery of this region lying about the base of Monte Diablo is very charming, and not surpassed in the circuit of the bay counties. The mountains lying towards the west have heretofore, in some measure, shut Contra Costa County out from the recognition she deserved, but the last few years have seen the

buildings of the railroad along the shores of San Pablo Bay, and the construction of well graded wagon roads to Oakland. The natural outlet for San Ramon Valley, which is south of the Pacheco Valley, is through the Hayward's Cañon. The southern part of the county has easy connections with Livermore, and that great and growing valley. The whole region embraced by these valleys, as also the lesser Moraga Valley towards the west, is a heathful, busy, and improving territory. The day seems near at hand when Martinez and Livermore will have direct railroad communication, which will greatly aid in the development of Walnut Creek, Alamo, Danville, and the many thriving towns and villages which are scattered along the main county roads.

As yet, fruit culture and gardens are in a transition state. How is it that so many of our well-to-do farmers here, as elsewhere, manage to get a sort of "camping out" look about their places? We have known men who, after living on the same place for twenty-five years (more than the working half of a man's life), were still innocent of the effort of planting a fruit tree or a rose-bush. Some very lazy persons will now and then struggle through the task of planting one or two shade trees of the cotton-wood type, so that they can loaf around in the shade Sunday afternoons. Your true horticulturist plants by virtue of a deathless enthusiasm for the beauty of a tree—and takes the shade gratefully, as an unearned gift, an unexpected bounty.

These are the foothill valleys of the Coast Range. A little removed from the direct sweep of the trade winds, and out of the line of the bay fogs, they offer advantages of soil and climate which will not be long overlooked. We

expect to see a steady growth, a gradual dividing up, of the large ranches, and an increasing interest in small fruits, orchards, vineyards, orangeries, and gardens. Fifty years from now some of the most prosperous communities in California will be nestled in the narrow valleys and knotted hills which cluster about legend-haunted Monte Diablo, where the tonsured Padre exorcised the evil one who, in the form of a giant grizzly, offered him the traditional cash inducements. This is supposed to have happened in the Spanish days of California, and the Berkeley students, who poke around the coal mines of Monte Diablo, and write theses on geological subjects, appear to have reported no recent satanic temptations.

Farm and Orchard.

FARM AND ORCHARD.

The Fairs.—September is the golden month—the month of apples, of grapes, and of Agricultural Fairs. They will come scattering along, and extend far into October. There will be prize cattle, patent pumps, lemonade-selling boys, and pool-selling men; there will be hot weather, glitter and confusion, a week of rush, and some subsequent days of repentance. But the thing for the farmers to remember is, that Agricultural Fairs are, if properly used, a source of education, and distinctly profitable. Go there to study what other men are doing; to show them your own processes; to compare notes; to decide what to purchase; to meet old friends, and make new ones. Go there to get somewhat of an idea concerning the largeness of the world, and the many trades, arts, and professions which depend upon each other's help. Fairs properly conducted are public benefactors. It is true enough that horse-rac-

ing and political chicanery have predominated at some of our annual gatherings. But we can, if we will, remedy this. We can make our County, District, and State Fairs, legitimate exhibits of products and machinery and simple trials of speed, giving a proper share to each of our great farming interests.

The grain in the field, being mostly threshed by now, needs to be hauled to the house or shipping point, or fenced, in the field, to prevent stray cattle from destroying it. For this, as for a multitude of other purposes on the farm, we have used a panel fence, made of six inch fencing, in twelve or fourteen feet lengths, and wired to light, temporary posts. The inevitable tax which small rodents, such as gophers, and the ubiquitous squirrels, levy on grain in the field, makes any long delay in hauling it an unwise proceeding. The art of success in farming, we have come to believe, is in a wise combination of knowing how to raise better than average crops, and knowing how to take care of them when harvested.

Fruit Trees need no care now except extra caution so as not to break the limbs down while gathering the fruit. Some hired men are very careless in this respect, and need watching and a word in season. Ladders being cheap and effective, the climbing into a tree, with heavy boots on, and mounting to the topmost boughs, often barking the tree in a dozen places, is a practice to be deplored.

Budding is now in order, and must be pushed with vigor, while the sap is in a good flowing state. Journals have so often given cuts and descriptions of this art, that little more need be added. It is to be hoped that every one of our readers understands how to cut the stock, take off the bud, insert, and tie.

But, we apprehend, while the mere theory of budding is generally known, there are many whose buds "do not grow." This may be because the buds were too young, taken too early, or too old, and more woody than is desirable. Water-sprouts from near the base of a tree are not apt to furnish good buds, and increase the danger of getting "bad stock," that is, a seedling sprout. The knife used has need to be extremely sharp, and on this point, also, many fail. The bud, when taken off, should not be handled too much, bruised, or broken. When properly slipped in the T-shaped cut made in the stem of the stock to receive it, the inside of the bud clasps the wood of the stock and lies upon the cambium, so that the formation of new connecting cells at once begins. There is, to a thoughtful person, much food for thought in this continued transplantation by the budding process, through age after age.

Small Fruits.—There will be plenty of blackberries still, if watering is continued. The Snyders are very thrifty so far, and will show what they are worth another year. The Kittatinny's have been the family standby. Strawberries come in for their second crop if well taken care of; heretofore Captain Jack, Forest Rose, Monarch, and Black Defiance have done well. It is a good plan to let the water run in a narrow but rather deep channel close to the vines, and fill this partly up with manure or mulching so as to give nourishment, and also to prevent the vines from baking. It is also a fine thing to try new ideas once in a while, and shake off the cobwebs of dim tradition.

Fruit Boxes.—These should be of good material, well made, and clean. The best fruit needs to be set off to good advantage. Poor fruit does not pay to send to market at any time, and

this season there is no room for it. The free package is not very much in use, but when choice fruit is shipped East, or to distant points on the coast, an extra charge is made for the box. Cooke & Sons have a patent box-fastening, which some of our growers are testing this year, but nothing definite is yet reported about it. We lately saw a fruit-grower using a box-fastening of his own invention, which was based on the idea of a movable steel staple, which clasped over the end of the lid and into a small hole in the end of the box. He is using it on all his boxes, and a little time will decide its merits. There is room yet for decided improvements in the box system, which is a heavy tax on the producing classes at present prices of fruit. Fruit has, each successive season, required nicer packing to maintain a leading place in market. For mere beauty and artistic finish some of the mountain peaches or grapes take the lead.

Correspondence.

[The editor of the CALIFORNIA HORTICULTURIST cordially invites all persons interested in any branch of horticulture to send practical questions and notes of their own successes and failures. A brief, unadorned statement of events in one little garden may often prove of universal interest. Short notes from busy people, all over the Coast, will make this Department fresh and valuable.]

A DESTRUCTIVE MOTH.

EDITOR CALIFORNIA HORTICULTURIST—
Dear Sir: Herewith, by mail, I send you a small paste-board box containing a sort of general menagerie of depredators.

1st. Are several balls of eggs of a dull whitish color held in contact by a felt-like substance.

2nd. A healthy larvæ, caterpillar, with tufts on its back; also pencils of hair; one on its tail end, two on head end. This and all such caterpillars

seem to be hatched or evolved from the ball of eggs—each ball containing many eggs.

3d. A dull-colored rudimentary-looking moth, somewhat resembling a Brahmah chicken just hatched on a small scale; size of a large bean. This moth lays these eggs upon apple, pear, and other trees, notably upon Astrachan and Pearmain. These eggs evolve these tufted caterpillars in great numbers and the caterpillars eat the young fruit ravenously; and then, after ruining the fruit, they eat the leaves for cocoon purposes. Leaves seem to be a necessity in cocoon making. This caterpillar makes no web—does not live in crowds but goes it alone—and is, therefore, too tedious and costly to kill or catch. It, (or they) has (or have) ruined much fruit in this section this year, and there is a good show for greater ruin next year, unless some enemy by nature carries off the pest. Inclosed with the lot find also a sick caterpillar covered with green parasites—more power to them!—which seem to work on him. Also, a chrysalis, brown, of oval shape, not one half inch long, which I find housed among the caterpillar cocoons. Some enemy, I hope.

Is this a common lot of nature's diablerie? Tell us all about it next month. If *you* can not give us clear light on this subject, please forward the lot to the Bugmaster-General of the California University, or any other fellow who is up on bugs and things.

Yours truly,

J. W. GALLY.

Watsonville, Cal.

[This very characteristic letter of our long-suffering and patient correspondent, has been awaiting Mr. River's return, and this is the Editor's apology for the delay. We do not want the Dr. to have any more land-pirates, but if

they do attack him, may he always inform the HORTICULTURIST.—EDITOR.]

THE ORGYIA MOTH.

EDITOR HORTICULTURIST—Dear Sir: Prof. Hilgard handed to me a box containing various changes of an insect which he, the Dr., was desirous I should determine and write you concerning.

Your correspondent, J. W. Gally, is so good an observer that there remains but little to be added to his account. The clusters of eggs, the larva, and the moth, are three stages of a day-flying moth of the genus *Orgyia*, family Liparidæ, group Bombycoides of Authors. The specimen called by your correspondent "rudimentary" is a perfect example of the female, this sex always being apterous in this and allied species. The brown chrysalis yielded an ichneumon fly of great power. The ichneumon belongs to the order Hymenoptera; there are many species and all great destroyers of caterpillars. The little green flies belong to the same order and are enemies to Lepidopterous larvæ of small proportions.

The larvæ of *Orgyia* are pests to the orchardist both in Europe as well as in America. Hairy and tufted caterpillars are not eaten by many species of birds, but their cocoons are opened and the chrysalis devoured by the nuthatch, the house-wren, and the crested titmouse. The larvæ of this moth though not gregarious are active, dropping from the branches of trees, then making their way back again up the trunks, and during these perambulations might be easily secured. They fall when touched or are shaken, and their cocoons are formed in crevices of bark. A boy in an orchard ought to give a good account of these pests. The female moth being unable to fly, never leaves the tree on which she is bred, and so can be

picked off easily; every capture of this abortive looking thing represents a whole brood of eggs, larvæ and chrysalis all in one. I remain, Mr. Editor,

Yours truly,

J. J. RIVERS.

Curator of Museum, University of California, Berkeley.

APRICOTS ON PEACH STOCK.

EDITOR HORTICULTURIST—Dear Sir: The question was asked in a recent number whether or not the apricot will produce as well on a peach root as on its own root. I answer yes; it will produce as well, and even better; but it is not as long lived on the peach as on its own root. There seems to be a law that all stone fruit is increased in productiveness when a different stock is used, but this process of changing shortens its life. The peach is a wonderful producer, surpassing any other of the family, so it ought to make a good stock to bud the poorer bearing varieties upon.

With reference to varieties, I have found that the Royal Apricot will produce more new wood for the first three or four years than any other variety, and then begins to yield steadily. Four of the best varieties in this section are Royal, Peach, Large Early, and Moorpark. The last of these is the most profitable variety for market and canning.

Now, as regards making trees bear, I have grown fruit for twenty years and I have tried quite a number of experiments, but the never-failing process is this: Let every fruit-grower dig the earth from around the trees, say to a distance of two feet from the base of the main trunk, and put one quart of salt in the pit and on the exposed roots. If this be done I have no doubt of the tree's bearing. This plan applies to

stone fruits. My trees, especially the Moorpark Apricot, are almost too heavily loaded every year. I should suppose that if this treatment were applied now it would show its effects by next season. It will not be necessary to apply salt oftener than once in three years, and perhaps not so often.

Your correspondent also asks for a list of apples for Southern California. The following are my choice for good keepers: Yellow Newtown Pippin, W. W. Pearmain, Rawle's Janet, and Ben Davis.

With regard to cherry stocks, I think the Mahaleb root ought not to be planted on any other than damp lowlands, while the Morello succeeds on the dry plains, and no other variety does so well in this hot, dry climate. The Mayduke is only passable here. Our best varieties of cherries are grown on damp soil, where they are not exposed to the excessive heats. The Mahaleb Cherry root is less inclined to go down, and its tendency is to spread close to the surface if sufficient moisture can be had.

Yours truly,

J. E. CARD.

Woodland, Yolo Co.

A HILLTOP GARDEN.

In California vegetables are very scarce in the beginning of winter, at least in most lowland localities. I have three crops a year of Early York Cabbage, the kind I raise on my place. I do not pull up the August crop, I cut the head off from the stalk and in two weeks later there are plenty of new suckers, all of which I cut off except the upper one, and in November or December I have fine, full-grown cabbage.

Spinach is a very delicious green for winter. I usually pulverize the sunny slope of a hill and have the ground ready for the first rain, which we have

here sometimes in September. After that I sow the seed in rows, and in December it is ready for table use. The soil of the valley is cold after the first rain, but in the hills it retains the heat for a long time. A row fifteen feet long, if it is not hoed or thinned, will produce ten pounds of spinach; but if properly cultivated, it will give at least twenty-five pounds of fine, large leaves, which pay well for the labor. I also sow spinach in January, but it is not near so large or tender as the first crop. The plants of the second sowing appear to suffer from the dry wind which we so often have in February.

AGAPIUS HONCHARENCHO.

Ukraina, near Haywards.

[Some day we are going to visit that little hilltop home in the Coast Range. The Taro roots Mr. H. gave us last winter are growing vigorously, and, being left in a box, can be moved under shelter if next winter proves as frosty as the last.—EDITOR.]

A REMEDY FOR APHIS.

EDITOR HORTICULTURIST:—I had in my conservatory many plants, that were much affected with the scale bug. I had them carefully washed with soft soap, a tedious and expensive labor, and one not effective, for the scale would quickly return. The plants affected were hard-wooded and thick-leaved, such as Camellias, Stephanotis, Orange trees, etc.

I tried syringing with various washes with more or less success; with a solution, too strong I suppose, of carbolic acid, which is very destructive to germ and insect life, I destroyed not only animal life, but also new and tender vegetable growth. I then tried pure kerosene. I procured from a druggist an atomizer, and filling the bottle with kerosene, sprayed over a Camellia to be experi-

mented upon. It was a very dirty plant, branches and leaves covered not only with scale, but with black fungus; a very small quantity sufficed to vaporize and cover the entire plant. After the fluid had evaporated and the plant was dry, the scales were found dead, shriveled, and partly detached, and with the slightest touch fell off; the black fungus also, which everybody knows is so tenacious on the leaf, was dried up into a loose powder, which a shake sent to the ground. I did not confine myself to the single experiment; but have since used kerosene in the spray on several other plants, pestered and diseased with these parasites, orange trees, etc. I have also tried atomized kerosene to destroy aphid on Pelargoniums and on the soft and tender flower buds of greenhouse roses. I destroyed the aphid, but the new and tender growth of my plants was destroyed also. T. B.

San Francisco, Cal.

[This is a valuable note from a gentleman whose previous correspondence has been widely copied. T. B.'s last letter was copied, duly credited, in the *London Gardener's Chronicle*.—EDITOR.]

FROM A MOUNTAIN GARDEN.

EDITOR HORTICULTURIST:—Since you asked for garden letters I will write and let you know how this garden progresses. The roses are blooming for the second time this season. Our Petunias are now in their prime, as the saying is. Beds of crimson, white, and variegated Petunias brighten up a garden wonderfully. Our double scarlet Geraniums are just beginning to bloom, though the single pink ones have been in bloom for some time past. The Geranium is one of my favorite flowers, for it makes such a brilliant display. Our Fuchsias had a hard struggle to live through the winter, but they grew very rapidly in spring,

when they got started. I do not know how to keep my plants from the frost in winter and spring, and I wish some one would tell me. Last winter they froze in the house. My Pelargoniums still continue to bloom. The Coreopsis, Candytuft, Morning Glories, Scarlet Beans, Balsams, and Dahlias are doing nicely. The Verbenas, since the frosts were over, have grown very fast, and from seed too. My Lantana is just showing its clusters. When it is nearly sunset, the brilliant petals of the Evening Primrose unfold one by one, and display the perfect flower of one of the most delicate of the "old time flowers." Perhaps you think that we have an old-fashioned garden of annuals and hardy plants; but no choice hot house flowers will live through the winter in these mountains. The weather is very warm here now. The thermometer has been as high as 104° in the shade. The sun is so hot it wilts the plants.

H. W. HAWLEY.

North Columbia, Nevada Co., Cal.

SQUASH BUG REMEDY.

EDITOR HORTICULTURIST—Dear Sir: A remedy for the squash bug (*corius tristis*) seems to be much desired by farmers and horticulturists. One remedy for the pest (when vines of the squash family are infested) is to remove all the earth from around the roots (as far as can be done without injury to the vine) and fill up with a mixture of dry ashes and salt, which will prevent the insect from burrowing near the roots. Another remedy is to lay pieces of boards along the rows a little raised from the ground by small stones. During the night the insects will congregate under the trap. The boards should be examined early in the morning, for as soon as warmed by the sun the insects will disperse over the vines. I have

never had a chance to try these remedies, but some of your readers may be compensated by trying them.

WALTER YATES.

Centreville, Cal.

A SERMON ON A POSTAL.—Dear Friend: My article for the HORTICULTURIST must be short. It is: Don't kill the birds, but provide plenty of water for them. They alone can save us from grasshoppers and a multitude of destroying pests. Yours faithfully,

R. B. BLOWERS.

Woodland, Cal.

[This is a condensed idea, which sounds very much like Mr. Blowers. When we were visiting him we noticed that he kept a fountain on his lawn nearly all day, not so much for the grass, because that was wet enough already, as for the sake of the birds. The little rascals hung about it in swift flashes, evidently charmed with the cool rush and sparkle. When the stream was shut nearly off, so that the arms of the lawn sprinkler revolved slowly, the birds rested upon it, and sipped with an air of condescension. It was a very pleasant picture.—EDITOR HORT.]

QUESTIONS ABOUT DAPHNE AND PELARGONIUMS.—EDITOR HORTICULTURIST: Can any one tell me the proper treatment for a Daphne? I do not succeed at all with mine; and what is more discouraging, I can not hear of any one who does. Also, I would like to know what is the matter with some of my Pelargoniums. The leaves begin to turn brown on one branch, and it seems to spread over the entire plant. Some of my neighbors have had the same trouble. I suspected an insect, but have not been able to find any such cause. The plants are in the open ground. C. T. C.

Sonoma, Cal.

TREATMENT OF LILIES.

EDITOR CALIFORNIA HORTICULTURIST:—

I have been at a loss to know how to treat my white lilies. They bloomed beautifully this year, but when I examined them after the leaves were dead, I found that the bulbs seemed to be lying on the top of the ground. I did not think that would do, and so I had one bunch dug up and set three or four inches below the surface. The new leaves were coming out before I had them moved, but they have not showed above the surface since, and I am afraid they are killed. I have not dared to move the others and they are baking in the sun. What shall I do? L. C.

Alameda County, Cal.

[The common garden lily (*L. candidum*) is an old and deserved favorite, and we hope to see its culture extended. It is the nature of its growth to form new bulbs each year above and around the old one, so that the whole clump grows nearer the surface each successive season, and does really seem at last to "lie on the surface." After blooming, water should be withheld for some weeks. The clump may then be taken up and re-set, as our correspondent writes, or, as will often seem advisable, divided into smaller pieces. These operations ought not to injure the lily, but rather to give it a new lease of life. This re-setting of herbaceous perennials and lilies becomes at varying intervals of time a necessity. It is a good time also to enrich the soil when needed.—EDITOR.]

CAPTAIN BARRON, of Alvarado, has a pond six hundred feet in length, and five feet deep. It is stocked with carp and trout, and aquatic plants will be introduced. An artesian well supplies water.

Editorial Department.

THE OUTLOOK FOR NURSERYMEN.

After some months spent in the central counties of our State, looking particularly into the condition of the orchards, nurseries, and gardens, we are inclined to take a favorable view of the coming tree-planting season. Of course there is a possibility of a severely dry winter; there is always a chance of that. But if the rainfall is anywhere near an average, the number of new orchards planted out will show a percentage of increase over last season. An increasing interest in newer varieties of fruits is very evident; there is, among our farmers, a strongly marked desire to know more about fruits and flowers, and to set apart a space for orchard and garden. It is a feeble sort of thing to say that we like this growing interest—we are glad, we rejoice, we fairly jubilate over it. The strong tide now setting towards the improvement of small farms, the beautifying of city lots, can never be checked, but must go on until our sunny slopes and hidden valleys shall blossom into a second Palestine.

This year we find much questioning concerning the Olive, its cost, treatment, soil required, and probable profits. Beyond a doubt there will be many experiments made with this tree in the course of a few years. Much credit is due to Mr. Kimball, of San Diego, Mr. Elwood Cooper, of Santa Barbara, Mr. West, of Stockton, Mr. Rixford, of the *Bulletin*, and others, who have aided in disseminating knowledge with reference to the Olive. The Carob tree, also, is liable at any time to rise in popular favor, and deservedly so. The Japanese Persimmon is not likely to be in quite as great demand, though a good many will be planted. Lemon and Or-

ange trees will be largely taken by the central counties. Last winter made a good many orchardists shy about Limes, which will, in a great degree, be left to the southern counties.

The nurseries visited this summer showed a good stand of fruit trees. Peaches slightly injured by the Diabrotica, which very unpleasant pest eats out the ends of the branches, stunts the growth, and makes the tree crooked. The peach-talk among farmers generally runs towards the finer varieties of clings, and the best of the early peaches, for both of which there will be a demand. Pears are not over-abundant. The kinds required are each year narrowing down to those used for shipment East—Bartlett, Winter Nelis, Doyenne, D'Alencon, Easter Beurre, Beurre Clairegeau, etc. Of course an assortment will always be desirable for family use.

Through Yolo and Colusa counties northward, or, in other words, over the belt of country between the Sacramento River and the summits of the Coast Range, there is a noticeable turn towards orchard planting. Northern San Joaquin County shows the same tendency, and the foothill region everywhere. Several small local nurseries, of recent date, seem building up a business in a quiet way. The mountain regions have their nurserymen also, who, by using a copious supply of water on the decomposed granite, and red soil, succeed in growing very nice trees.

What is particularly needed among the nurserymen of this coast is a spirit of good fellowship, and hearty co-operation, and even of generosity. They have many mutual interests, and none which need seriously conflict. They ought to warn each other against tricky and unreliable dealers, oily gammon agents, and those perpetually recurring frauds which weaken one's faith in hu-

manity. By dealing directly with the men who plant, assuming cheerfully that responsibility as regards truth to label, which is a part of the nurseryman's business, our tree growers ought, can, and, we feel sure, will control a growing trade. It is rarely safe to have a traveling agent, who, if dishonest, will do a nurseryman more harm, and injure his reputation more in one month than he could recover from in years. It is much better to have, so far as possible, personal business relations, by correspondence and otherwise.

GRASSES AND IMMORTELLES.

September is late to begin thinking about these beautiful decorations of the winter parlor, for the grasses will some of them be over-ripe. But there will be some grasses yet in wet places, and if the bed of Immortelles is watered heavily, new flowers will soon appear. The point to be remembered is that the grasses must be cut while just coming out of the sheath, or only just fairly unfolded; and the clusters of Immortelles, or everlasting flowers, which you gather, should largely consist of buds. Dry both grasses and flowers in the shade, hung with heads down (which they do not mind) to keep the stems reasonably straight.

We have on this coast so great a number of native grasses, some of surpassing beauty, that no house, no matter how poor the owner is, need be without clusters and bunches of mingled varieties. A person in one locality can easily save and dry those species found in that vicinity, and then exchange with some one elsewhere who has collected different kinds. In this way persons may soon obtain both lowland and upland grasses, and mingle the rank, brown, marsh grasses with the silver tassels and nodding plumes of the grasses

of mountain valleys and rugged slopes. We wish there were more of neighborly exchanges of this sort; more people collecting grasses, ferns, butterflies, beetles, land or marine shells, minerals, plants, or whatever else enlarges one's horizon, and brings a new brightness into their lives.

Just now, the garden being still glorious, there is at first a slight lack of enthusiasm in gathering grasses and everlastings. You have, however, only to consider how, even here, in flower-land, the frosts lessen our supply, and the rain clouds darken our skies, to realize the desirability of having some vases filled with them. Besides, as everyone knows, well chosen and well prepared grasses are beautiful at any season. Personally, we dislike the artificially colored grasses, but they will always, we suppose, be in market for the benefit of those who enjoy that sort of thing.

We fancy, too, that the trade in imported grasses and flowers is yearly increasing. Some of the later styles of baskets and stands, woven out of the stems of the grasses themselves, are very nicely done, indeed, and deserve a place anywhere. The imported French Immortelles exhibit a greater variety, even when undyed, than have yet been grown on this coast, though there is no obstacle in the way of some one building up quite a trade in California-grown Immortelles. If any of our readers have had experience in preparing them for market, we should be glad to hear it.

One of the appropriate places in which to begin a collection of grasses and immortelles, would be the Grange Hall. Many of our readers and friends belong to the Grangers, and we should think that, by united action, a choice collection might be made. In order to give it any real educating value, each species should be carefully labeled, and, when-

ever possible, duplicate collections made for exchanging with other Granges. What enterprising Grange will be the first to build a pyramid of grasses which shall reach from the floor to the ceiling?

A CENTREVILLE CONSERVATORY.

There has been quite an awakening of interest in horticultural matters in the vicinity of Centreville lately. Dr. Allen has built a small conservatory, which looked very nicely at our last visit. The Daphne was making new growth. Quite a large Cockscorn, a Coral plant, a Fuchsia racemosa, Begonias of course, hanging baskets, and cuttings in process of rooting made up the general array. The outdoor garden, for which, however, Mrs. Allen must have at least equal credit, is really one of the marked features of Centreville, and, having another handsome garden alongside (Mrs. Hilton's), this part of the town is, in point of fact, quite the aristocratic quarter. The six pillars of the porch in front of the house have each a different species of vine, the selection being—White Jasmine, Pink Maurandya, Akebia quinata, Solanum, Golden-leaved Honeysuckle, and Trumpet creeper (Bignonia). Mrs. Allen's Asters, Dahlias, Perennial Phloxes, and Roses, have always been admirable.

OUR FRONTISPIECE.

Our illustration this month represents the late summer apple, "Duchess of Oldenburg." Its general merits are considerable, and its characteristics are described as follows:

Fruit.—Size, medium to large. Form, roundish, flattened. Skin, smooth with a light bluish bloom. Color, light and deep red, striped and splashed on a yellow ground. Stem, short. Cavity, acuminate. Basin, deep, wide, even, regu-

lar. Calyx, large, nearly closed. Flesh, slightly yellowish white, sharp sub-acid, juicy, and when well ripened, pretty rich. Season in California, August, and often keeps through September.

Tree.—An upright, vigorous, hardy, and healthy grower, with dark-colored shoots, and broad, dark green, coarsely serrated leaves. A profuse bearer, apparently adapting itself to all soils and situations, and yielding a fruit of great value for marketing and for cooking purposes. It is of Russian origin.

We are indebted to Dewey & Co. for the engraving, and to E. J. Hooper for the coloring.

CORRESPONDENCE AND ANSWERS.—It will be noticed that some of our correspondents ask questions this month which it seems desirable shall be answered by practical hints and ideas from various sources. A word to the wise is often sufficient; a suggestion often sets the most dormant pen into vivid action; the mere thought of helping folks out of trouble should awaken our horticultural sympathies—so we may hope for flashes of chatty correspondence on Daphnes, Hydrangeas, Pelargoniums, and kindred topics.

We think the subject started by our observing correspondent Dr. Gally, and continued by Mr. Rivers, is worthy of much lengthier and more varied consideration. Who else has had similar orchard experiences? Who has tried remedies, and with what effect? There is no doubt but that the insect crop of California is in future safe to calculate on. So many more insects; so much less fruit. This might be eminently satisfactory, if only a man's neighbors got the insects. But nature is most severely impartial, is utterly oblivious of fences and title deeds, and (whatever happens to apples) secures a lively succession of

entomological specimens for scientific research. Let us hear more about the day-flying moths, and the little ichneumon flies.

NEW SPECIES OF VIOLET—*Viola Brook-sii*.—This description was read by Dr. Kellogg, at the California Academy of Sciences, Aug. 4th, 1879:—Stem $\frac{1}{2}$ to 1 foot high; soft, hairy throughout; root leaves 5-9 inches long, on lower stem 4-8, and successively shortening or set close to the stem at the top; blade egg-shaped, mainly $\frac{1}{2}$ - $\frac{3}{4}$ as long as the leaf-stem, and short, wedge-form at base, slightly toothed on the margin. Stipular appendages very unequal (alike in specimens from Shasta by H. Edwards, from Kern County by S. Brannan, Jr., and from Siskiyou County by Elisha Brooks); larger $\frac{3}{4}$ inch long, smaller one $\frac{1}{4}$ to $\frac{1}{2}$ inch long, oblong to heart-form nearly sharp-pointed, toothed or entire, leafy. Filamentous appendages of the anthers very narrow, thread-like (not at all widened or wing-keeled as in the allied *V. glabella*, types of which we have from the same section); flowers none (late in the season), probably yellow; fruit on very short stems, about 1-5th the leaves. Unfortunately all our specimens for the last eight or ten years have been imperfect, even this last one has not the root; perennial (?)

FUTURE NUMBERS.—Our October number of the HORTICULTURIST will contain a long and valuable article on New Zealand and the trees of that interesting region. There will also be another New Zealand article from a new contributor in the November number. We are still preparing an article on Cannery and Canneries, and the subjects of Farm and Orchard, Garden and Lawn, Greenhouse and Conservatory, Outdoor Notes, and hints from everywhere will receive more than usual attention.

THE STATE HORTICULTURAL SOCIETY.—The preliminary meeting of all persons interested in the formation of a State Horticultural Society will be held on the evening of the 17th of September, probably at the Hall of the Academy of Sciences. Full notice will be given in the daily papers. Over sixty well-known citizens have signed the call for this meeting, and doubtless will, most of them, be present. The friends of the movement have done hard work, and we think it ought to succeed.

Editorial Notes.

LILIES FOR MINE RESERVOIRS.—While in Nevada County, we heard of a brilliant idea. It was not ours; we wish it had been. We can, at least, be happy over it. And this was the idea: All over the mines, at least in the blue gravel regions, and more or less elsewhere, are small reservoirs, on hill-sides or plateaus, or walled in on floors of bedrock. Some of them supply water to the little towns; some are used to irrigate gardens and orchards; by far the greater number keep a head of water for mining purposes. Now some wise people have begun stocking these reservoirs with fish, and trout at that, so that is the first good idea, but not the one we started out to tell. But a few months ago one of the mining superintendents came to a friend of ours, and wanted to know where he could get several hundred roots of the white pond lily to plant in his reservoir, and what would they cost? So he was told it would be fifteen dollars a hundred post-paid, from some Eastern firm, and we hope he sent for them at once. What a lovely place that reservoir will be for moonlight sails and quoting of poetry in a few brief years! We happen to know there is a crag near it, and steel-dark masses of cedars mingled with spruce and pine, and tiny islets of rock with nothing to do but make weird shadows. When the lilies are in blossom, write and ask us where it is. Is it not a bright idea, really? Suppose that we put the hardy species of pond lilies in our mountain lakes, and people had sense enough to leave them alone for a few years! There is no earthly reason against it, except our own complacent laziness. Nor need our friends who live in the Sierras wait to find a lake apiece, but wherever there is a spring or a stream they may dig out a basin of sufficient size, and have a water-garden of not only pond lilies, but also of many other aquatic plants, if only the water is not too cold. Let us organize ourselves into lily-planters.

FALL TREATMENT OF HELICHRYSUMS.—These,

the most brilliant and popular of the so-called everlasting, seem to be wonderfully well adapted to our climate, and often exhaust themselves by too abundant blooming. Seed should be saved from the first flowers, which open in the middle of the plant, and, some time during this month, it may be well to clip the ends of the branches back to half their length, give the bed a good soaking, and so obtain a new growth for later blooming. We have had plants of *Helichrysum* live for two or three years, and bloom almost incessantly; but self-sown seedlings come up so abundantly that the easiest way is to leave a patch in some convenient place each season.

REMEDY FOR APHIS ON PLANTS.—There are, as florists know, various objections to the use of tobacco smoke in plant houses. Of all the substitutes tried at different times nothing appears more promising than the preparation of the powdered flowers of the *Pyrethrum cinerariæ folium*, known otherwise as the Dalmatian insect powder. We hear from many sources that this has proved itself a most effective insecticide, not only for house flies, cockroaches, and fleas, but also for the aphides and other plant pests. There are several styles of small blowers or bellows made and sold for diffusing the powder. The style used by G. N. Milco, of Stockton, whose Buhach is a reliable preparation of this *Pyrethrum*, is known as an "Insufflator," and scatters the powder like dust in the air. Prof. Hilgard gives us a very flattering account of the insect destruction caused by the Dalmatian powder. It has been thought that a light dose, which merely stupefies insects, allows them to recover and escape; but experiments would seem to show that with a good article of powder such a recovery is impossible. Mr. Wickson, of the *Rural*, says that even the *Diabrotica*s, so destructive in young peach trees and garden plants, are forced to succumb to this agency. Notes in the *Canadian Horticulturist* state that W. Saunders, the noted entomologist, considers this Dalmatian *Pyrethrum* a valuable acquisition to our destructive agencies.

ONE OF OUR FRIENDS.—The lady-bird, so common in orchard and garden, and which the children of to-day, in accordance with traditions of many generations, put on the tips of their fingers, and start off with a nursery rhyme—this identical red lady-bird (*coccinella*), is an important coadjutor of the horticulturist, pitching into the aphides and other plant enemies with a most commendable zeal. In France there are governmental sign-boards put up at the country cross-roads, and by rural school houses, telling the parents and children how to know the farmers' friends from the farmers' enemies; what to kill, and what to protect. We begin our list of friends with the lady-birds; may their race increase.

COSTLY HORTICULTURAL WORKS.—In our own studies we have often felt the need of just that kind

of a reference library on horticultural and kindred topics, which a really successful State horticultural society would in the course of time gather for its own use. Costly editions of simple works, and sets of bound periodicals, pamphlets, and reports, not easily attainable by private endeavors, may be collected by a vigorous society and made a means of educating the public.

SOME PLANTS AND TREES WORTH INTRODUCING.

—Our nurserymen might more often turn their attention to the plants of New Zealand and Australia, from which we may expect many more acquisitions. There is the *Podocarpus ferruginea*, a tree of fifty to eighty feet in height, whose wood makes good furniture, is very durable, used for piles, and grows in dense forests. Other species grow to a greater height, and some are very ornamental. *Sophora Edwardsii grandiflora* is a beautiful tree, bearing abundant clusters of bright yellow flowers, and blooming when three or four years old. The wood is almost indestructible, and resembles rosewood in texture, color, and value for cabinet work. *Parsonia alba* is a vine which has deep green leaves, white, bell-shaped flowers in panicles, and is very fragrant. *Aristolelia racemosa*, a small tree with red flowers, bears bunches of edible, currant-like berries, which are black in color.

TWO LAWN TREES.—Mr. Barry, the veteran horticulturist of Rochester, has lately been considering, through the columns of *Rural Life*, those two beautiful, but often neglected, trees, the Red Bud, or Judas Tree (*Cercis Canadensis*), and the Virgilia, or Yellow Wood (*Cladastris tinctoria*), both of which are unusually well adapted to lawn uses, and should be planted much oftener.

The Red Bud is a small tree, not over twenty feet high, and has clusters of pea shaped, purplish, rose-colored blossoms, which appear before the leaves, and fairly cover the branches. The tree seems in its mode of growth to somewhat resemble a quince tree. It is abundant in some of the mountainous portions of California.

The Virgilia has long pendent clusters of pure white pea-shaped fragrant flowers. It is a charming tree of graceful growth and easy culture. Both this and the Red Bud will thrive in a comparatively dry location.

A "RUSTIC FLOWER POT."—It were hard enough to keep track of the latest agony of the ambitious pot-makers. Some of our exchanges have a well-deserved sarcasm for that class of inartistic and positively vulgar garden vases and expressionless figures which occasionally stare out at us from some rich parvenu's gaudy grounds. Really, however, there is a good deal of pottery made in these days for window gardening, conservatory work, and similar purposes, which is, like beauty's self, its own excuse for being. Occasionally one finds a pot made in imitation of an old log, which, being subdued in

color, and sparing of gilt, is very handsome indeed. These may be used for hanging baskets, or to set other pots into.

This summer we found the common scrubby oak used for making rustic plant-holders. The oaks often grow hollow, even when only a foot through. So a tree was chosen, and cut into short sections. A board was nailed on one end, the flowers were put in and thrived exceedingly. The outside of these rustic cases was very ornamental, and bids fair to last for many years to come.

THE GEORGIA STATE HORTICULTURAL SOCIETY.

—This very successful and enterprising organization held its fourth annual meeting at Macon during the last three days of July. They are devoting their energies to the cataloguing of the fruits and vegetables adapted to each part of the State. That enthusiastic horticulturist, P. J. Berckmans, is President of the society.

PUBLISHING FRAUDULENT COMMISSION MERCHANTS.

—We see from the *Florida Dispatch* that a farmers' club there has resolved to publish at least once annually the names of all commission merchants through whom they suffer loss through fraud or neglect. If rightly done, such a course would benefit the reliable commission men; but it would require much discretion.

PATIENCE WITH SEEDS.—Where your seeds fail to come up as soon as you expect don't give them up. I have had seeds lie in the ground a year and then show themselves. But of course they must be kept moist all the time.

HOYA CARNOSA may be used as a basket plant. It does not require much soil.

TRIMMING PRIVET.—A Privet hedge should be kept trimmed down to about four feet. If allowed to grow higher the hedge will be too thin.

CAMELLIAS.—The Camellia is one of the plants that are as yet known among us only as the carefully tended and watched green-house pets. There is no doubt of their ability to endure our winters without protection, or with a very slight shelter. Planted out in a favorable place they will in time make specimens like one we read of in the *Gardener's Record*, which is about forty-five feet in circumference, though only five or six feet high, and loaded with thousands of flower buds.

ON THE UNIVERSITY GROUNDS.—We lately paid a visit to the classic shades of Berkeley. (We believe that is the way it is put in under-graduate essays.) Prof. Hilgard received us with a cordial welcome, and, meeting Mr. C. W. Dwinelle, Prof. Hilgard's assistant, we went over the grounds to see what was possible in so rapid a visit.

It seems to us that the University has, since the last appropriation, done much, and really as much as could possibly be expected, toward a complete and organized working experimental garden. The idea is to have sample beds of all known forage plants, textile plants, medicinal or otherwise economic plants, where possible, showing the difference between irrigated and unirrigated patches of each; to also have trees, shrubs, etc., accurately labeled, and the nucleus of the future Botanic Garden. The friends of scientific horticulture need have no fear but that this is being accomplished steadily and patiently.

In the department devoted to forage plants we observed Chinese Millet; Imphee (or Siberian Sugar-cane); Cusco Corn, a remarkable species of gigantic growth, widely anchored supplementary roots, no suckers whatever, and altogether a promising plant; Amber Sugar-cane; *Penicellaria spicata*; *Seradilla*; *Panicum spectabile*, and others growing in adjacent squares. We went through the textile and medicinal departments, where we saw much of value, which will appear in future notes.

In the field, the experimental squares of wheat were being threshed by hand, and the results weighed, even to the chaff. Here different kinds of wheat were planted with different kinds of fertilizers, and under differing conditions. The result will have a very decided value to the farmers of our State.

MR. A. STONER, of Louisiana, has sent us a description of the *Yucca Filamentosa* as a fibrous plant; also, an account of a machine for cleaning the fibre. This was accompanied by a specimen of the cleaned fibre, which is certainly very strong and smooth. We should think this a matter worth looking into, as there must be vast tracts of Southern California adapted to the growth of this *Yucca*, which we find grows well here.

DR. CURL writes us that the *Cyathea medularis*, or black tree fern, of New Zealand, often grows forty feet high, with fronds sixteen feet across. The *Cyathea dealbata* grows thirty feet high; its leaves are silvery underneath, and very beautiful.

"THEY SAY" that flowers of scarlet geraniums, asters, and many others, will keep their shape and color if dried in sand. Try it, and report.

LILY stalks, running up to bloom, need staking in time. Mulch the beds to keep the surface cool.

THE *Passifloras* are recommended for conservatory climbers because they are not subject to insects.

BUDDING ROSES.—The *Gardener's Monthly* says, editorially, in the course of its usual "Seasonable Hints," that it is to be hoped the budding of roses will not become a forgotten art. "Any hardy kind," says the *Gardener's Monthly*, "can be used for a

stock, and one may have a dozen or more kinds on one plant in this way. In budding roses, or indeed in budding any kind of plant, strong, healthy stocks should be selected, and, above all, strong, healthy buds. It is chiefly when weak stocks or buds are used that failure follows."

A LARGE CLEMATIS FLOWER.—While at Dr. Strentzel's last month we were shown a pressed flower of one of the hybrid Clematises which measured in honest Saxon measurement exactly eleven inches in diameter from the tip of one petal to the tip of the opposite one. Somewhere we have a note of the variety, but do not now remember the name. However, can any one bring out a larger Clematis?

A MOUNTAIN HOTEL.—We stopped awhile, this summer, in a home-like hotel, where there were innumerable plants in boxes on the front porch beneath the windows, and on the balcony, all in thrifty, vigorous growth. There were Oleanders, Fuchsias, Geraniums, Roses, and boxes of Annuals. Of course, therefore, there were books inside, and comfort everywhere. People in Grass Valley will recognize the picture. We earnestly wish that such hotels were universal.

The gardens of Oakland and Alameda never looked better than they did last month. There is only one fault to find; that too many persons fail to be original in their gardening ideas; they plant too much of the same thing; there is too often a lack of variety. The love of roses is increasing most delightfully. This State was made for a rose land—a garden of rose gardens.

MR. PETER HENDERSON'S valuable paper on "The use of the feet in sowing and planting" was marked for abundant extracts, but has been so widely copied already that our readers have probably seen it elsewhere. The gist of his paper is that in our dry and hot atmosphere the soil must be closely packed about seeds and plants. This is particularly true in sand or light loam soils. Tread the seed in; the soil must be firmed when the weather is dry, though, of course, not in wet weather.

SAN LORENZO GARDENS.—One of the garden spots of our State is that strip of territory in Alameda County, which lies near the San Lorenzo Creek, and about the quaint old country village of San Lorenzo. We had nearly said that there is in that immediate vicinity the richest land in the State. There is certainly none better in any place with which we are acquainted, and none better located with respect to markets and the complex civilizing influences which are essential to the true life of a community.

We lately spent a morning somewhat irregularly subdivided among several of the larger farms in this vicinity. Mr. E. Lewellyn was found at his fruit

house, where the product of his large orchards is classified and prepared for shipment. A large black prune, whose name Mr. Lewellyn had lost, proves to be the "Prince Englebert." To know simply and practically how to prepare prunes for market is now Mr. Lewellyn's ardent desire. He has large quantities of the best German prunes and, owning now the old Alden Factory at San Lorenzo, has made many changes in its construction, with a view to economy in the use of fuel, and the more perfect utilizing of the heat evolved. We should be glad to receive correspondence from disinterested parties on this whole subject of dryers.

Mr. William Meek, whose experiments in ginger culture were noticed in the August *HORTICULTURIST*, has beautiful shrubbery, and a garden blooming as if it were spring. The large lawn, refreshingly green, the rows of tall orange trees, the stone water basin (where pond lilies ought to be blooming), the white maurandya by the door, all these, and much more, are worth keeping in one's memory.

A little nearer the town, where winding hedges of green cypress circle about islands of large-leaved sycamore, whose spotted trunks have a peculiar beauty of their own, is another charming place—Mr. C. W. Hathaway's. We noticed a Tacoma Jasminoides climbing higher than the windows of the second story, and blooming abundantly. The passiflora on the bridge was hung full of yellow fruits, and roses covered the wide porch.

Then, if one rides through dreamy San Lorenzo, there is, on the western road beyond, the well known house of E. T. Crane. In front is a group of ivy-clad oaks, and garden beds lie scattered about them. A corner of asters will be lovely after awhile, and the gladioli seemed the finest we have seen for a long time.

San Lorenzo seems to be one of those places which, having all desirable capabilities of soil, climate, and nearness to a metropolis, will suddenly wake up some day and find itself becoming full of suburban homes. It is within reach of San Francisco for business or professional men. It lies between two railroads, the narrow gauge South Coast and the Central Pacific. Some of the best land on the creek, and within a short distance of the Central Pacific Railroad station, is offered for sale at reasonable figures, in large or small subdivisions. These are reasons which make the future of San Lorenzo certain, and investments there worth looking into.

A NEW FORAGE PLANT.—Prof. C. S. Sargent, of the Cambridge Botanic Gardens, sent us some seed of a new forage plant, which we shall test here, as it may become in some parts of our State a valuable addition to the fodder crop. It is the "Tagasaste *Cytisus protiferus*," a native of the Canaries. It requires a light, dry soil, and is rather intolerant of frost in winter. The plants should be set ten feet apart, may be cut for fodder two or three times a year, and will last for ten or twenty years. This is

the gist of what Prof. Sargent writes us on the interesting subject of this foreign plant.

SEEDS FROM AUSTRALIA.—Baron Ferd. Von Mueller, the government botanist for Australia, has kindly sent us seeds of *Eucalyptus gomphocephala*, the "Tooart" of West Australia; *Eucalyptus cosmophylla*; *Bambusa Tulda*, from India; *Glyptostrobilus heterophyllus*, the new Chinese swamp pine; and *Arundinaria falcata*, one of the hardy Himalayan Bamboos. An accompanying pamphlet on the "Maintenance, Creation, and Enrichment of Forests" will receive early notice.

Pomological Notes.

THE ORDER IN WHICH OUR GRAPES RIPEN.—This year the early grapes began to come into market about the first of July. The season has been later than usual by a week or ten days. The first grapes to ripen are the White St. Peter, the Madeleine Blanche, and the Black July. They come at very nearly the same time, sometimes one first, and sometimes another. This year it is the White St. Peter, a greenish, pointed, very juicy grape of inferior carrying qualities. The Black July, which came second this year, has a small compact cluster, berries small, round, good color, not first-rate quality. After these three varieties we have the Chasselas Hateiffe, a good, large white grape, which is followed by that old favorite, the Sweetwater, and this again by the Fontainbleau, which last seems to us decidedly the best of the earlier white grapes. The Black Malvoise, the Black St. Peter, the Zinfandel, the Muscat of Alexandria, and the Muscatel, the Rose de Peru, the Flame Tokay, and the Cornuchon Violette, follow in the order named, and keep our markets well supplied during a period of more than four months.

WASH TO PREVENT APPLE TREE BORERS.—We have seen it stated that one pint crude carbolic acid, or one-third pint of the pure, added to five gallons of soft soap, and twelve gallons of water will make an excellent wash for this purpose.

STRAWBERRIES.—An article on strawberries in the *Fruit Farm*, Russellville, Ky., says of the Black Defiance that it is a superb berry, healthy and hardy; of Captain Jack, that it is immensely productive, but inferior in flavor, and late; that the Cumberland Triumph is very large and of the highest flavor, and (a quality that might make it desirable in California) that the vines endure the hot sun better than any other variety.

Of the Crescent Seedling this writer can not speak from personal knowledge, but says it has been said to produce 14,000 quarts to the acre. The Duchesse he pronounces very early. The Great American, he says, has been tried and found wanting. The Monarch he pronounces the nearest to a perfect berry.

Sharpless he considers desirable to try. In conclusion, the writer makes the very sensible remark that strawberries are local in their habits, and that a variety which succeeds with one may fail with another; from which it follows that every one must test varieties for himself.

THE CHINESE CLING.—A fine boxful of this desirable cling came to us on August 4th from the orchards of Mr. E. R. Thurber, Pleasant Valley. There being no clings in eating condition in this section at that time, we sampled a few of them at once. It is a large, richly flavored, highly colored, white flesh cling, which is desirable for market where it does not curl, to which disease it is somewhat liable.

We might in this connection correct an error made a short time since. We stated that the paintings made for Bosqui's beautiful "Grapes of California" were all made in Pleasant Valley. Some of them were; but some were made at Mr. West's, near Stockton, and elsewhere. Four were painted in Pleasant Valley.

SEEDLING PEACHES.—Our friend, Mr. Leonard Coates, of Napa, sent the *Rural Press* some fine seedling peaches, one of which, marked "No. 13," appears to be worth further experimenting with. Bro. Wickson and ourself had the pleasure of examining them. Send along your seedling fruits.

HARDINESS OF THE JAPAN PERSIMMON.—Several correspondents of the *Gardener's Monthly* speak very positively on this point, and say that this tree is not hardy in New York, Missouri, Kentucky, or in similar climates. This has been an important question for nurserymen on this coast. No reputable grower or dealer wishes to sell trees where the chances are against them. If the Japan Persimmon will not grow in the Northern States, why that is the end of it. Can our nurserymen who mailed trees East two years ago inform us as to the general results?

New & Desirable Plants.

[We shall glean from our exchanges and correspondence, notes on plants either new, or of promise in our climate. Our nurserymen are invited to send notes on any interesting plants received.]

ARISTOLOCHIA GIGAS.—As one passes up Market Street, there is a plant well worth noticing in Mr. M. H. Lester's window, under the Palace Hotel. It is the tropical climber, *Aristolochia gigas*, with flowers nearly as long as one's hand, brilliant brown and green, winged, snaky flowers, four or five of which are in bloom at once.

MAGNOLIA HYPOLEUCA.—This is a variety of magnolia that blooms in mid-June, creamy white, and of a most delicious fragrance. The foliage also

is described as being most exquisite, of a glossy green, veined and tinted with red. Samuel Parsons, in *Rural New Yorker*, is very enthusiastic regarding this new magnolia.

DOUBLE-FLOWERED IVY-LEAVED PELARGONIUMS.—There are now many of these of various shades of lilac and some almost white. They are highly recommended both as ornamental plants and for cut flowers.

GLONERIA JASMINIFLORA.—This is the name of a new plant described in the *London Garden*. It is said to resemble the Jasmine. Has cluster of snowy white tubular flowers, the outside of the flower covered with white down. Tubes one and a quarter inches long, with four cleft corolla three quarters of an inch across. Blossoms in the winter.

ALSTROMERIAS.—These belong to a division of the lily family, originally from South America. One variety is from Peru, and known as the "Lily of the Incas." They are of different colors—red, rose-colored, and yellow spotted with purple. They like a sunny place, are free bloomers, and have the quality of keeping long in vases.

ERYTHRINA HERBACEA.—This is said to be more hardy than the old kind *E. cristagalli* (Coral Plant), but as this latter bears our winters, it is perhaps no acquisition.

QUAMOCLIT HEDERÆFOLIA.—This is offered by a French firm as a scarlet ivy-leaved *Ipomœa quamo-clit*. It is, however, said by the *London Garden* to be entirely distinct from the common Cypress vine. It is spoken of as desirable; is an annual, and a native of South America.

PROFESSOR SARGENT, in the *Gardener's Monthly*, recommends very highly a new fastigate Poplar which he calls *P. alba Bolleana*. The wood of this Poplar is said to be much more valuable than the old varieties. It is said to grow rapidly and to be ornamental on account of the contrast between the brilliant white of the under side of the leaf and the deep green of the upper side.

At the exhibition of the Mass. Hort. Society, Hovey & Co. exhibited a new lily—*Lilium Neilgherrense*—a new variety from India, said to be the most magnificent of all the Indian lilies. It grows at an altitude of eight thousand feet above the level of the sea.

F. B. Hayes showed foliage of a plant received by him as *Polygonum Japonicum*—a rapid growing, hardy, climbing plant, with variegated foliage, in shades of green, gold, and mixed colors.

S. R. Payson received the prize for "A new pot plant." The plant was *Maranta Massangeana*, "a very elegant and distinct novelty of dwarf, compact habit; leaves ovate; ground color, olive green,

beautifully blotched with brown. Up the centre of the leaf there is a broad, irregular band of white. The *Maranta* belongs to the Arrowroot, or Indian shot family, of which the *Canna* is the best known example."

THE *Horticultural Record*, London, speaks in terms of high praise of a plant blooming in one of the green-houses at Kew. It is the *Boronia megastigma*. It is not fully described, but is said to be exceedingly fragrant, with a perfume like violets, but somewhat different, and the odor is so powerful that a single plant will fill the house with its delicious fragrance.

Reviews and Exchanges.

[All books on subjects in any way connected with horticulture will be reviewed in this department. Publishers are requested to state the price of each book sent.]

THE ORGANIC CONSTITUENTS OF PLANTS AND VEGETABLE SUBSTANCES AND THEIR CHEMICAL ANALYSIS. By Dr. G. C. Wittstein. Translated from the German, with numerous additions, by Baron Ferd. Von Mueller. Melbourne: M'Carron, Bird & Co.

This neat volume of 332 pages is a valuable addition to our working library. Not the least important parts are those evident additions made by Baron Von Mueller, the translator, whose scientific work at the Melbourne Botanic Gardens has shown rare patience, knowledge, and enthusiasm. The Baron's translations and original works come steadily from the press, nor has any other man done more to develop botany and horticulture in Australia. In part first the proximate constituents of plants and vegetable substances are given, so far as hitherto known, together with their properties, mode of obtaining, quantitative values. There are enumerative chapters of plants under a systematic arrangement on the Candolean basis, with, however, such changes as were needed to distribute some of the monochlamydeous orders among other groups according to their greatest mutual affinities. In part second there is a lucid description of the apparatus required for phytochemical analysis, the metric system of weights being used; a chapter on the chemicals required for such analysis; also, and not of less importance, a general systematic course of phyto-chemical analysis, giving available treatments with ether, alcohol, hydrochloric acid, potash solution, etc. Lastly, follow abundant tables of comparisons between thermometric scales; of weights and measurements; of atomic and molecular weights, with symbols according to the modern doctrine; and of the specific gravity of alcohol in differing degrees of dilution. As an example of the value of this book to the student of organic chemistry, we will state that no less than thirteen species of cinchona are analyzed. The eucalyptus oils, which now rank as articles of commerce, and are used both in medicine and in the

arts, receive here that attention which their importance merits. The eucalyptus oils dissolve resins with great ease, but gutta-percha is not affected. They contain hydrocarbons, and a distinct compound—eucalyptol.

We have not space for further glimpses, but we commend the work to students as the best authority on phyto-chemic subjects.

MEEHAN'S NATIVE FLOWERS AND FERNS. L. Prang & Co., Boston.

The completion, not many weeks since, of this valuable work of Prof. Meehan gives us an opportunity to speak of it as a whole, after a careful perusal of its pages. The twenty-four parts now published form two volumes and cover nearly four hundred pages, large octavo. Ninety-six colored plates, drawn and painted from nature, and chromo-lithographed by L. Prang & Co., the well-known art publishers, make this work of great popular interest. Notwithstanding the rare beauty of these expensive plates, the work has been published at the low price of fifty cents per part, and it deserves to become an American classic, filling a place of its own by its artistic delineations and descriptions, its correct and concise botany, its glimpses and hints of hidden beauty, and its legends associated with each well known flower. It is a mistaken idea that books of this sort are only intended for the rich. There is hardly a mechanic, or farmer, or retail merchant, who could not, by laying aside twenty-five cents a week, own the whole of this beautiful work within one year; nor would it prove other than a most remunerative investment. The favorite flowers of children and poets are here, and some of our own California blossoms, which by and by will live in song and romance. When the holidays come, and the blessed traditions of Christmas revive, let flower lovers and home builders think of "Native Flowers and Ferns."

THE FORESTS OF CENTRAL NEVADA, WITH SOME REMARKS ON THOSE OF ADJACENT REGIONS. By Charles S. Sargent. Reprinted from the *American Journal of Science*.

This is a valuable pamphlet, worth study, and good authority. The tabulated comparison of the plants of the Rocky Mountain, the Nevada, and the Sierra Nevada regions, adds much to its interest. The Rocky Mountain region has 73 species, 47 genera, 19 timber trees, 6 small trees, 48 shrubs; while the Sierra Nevada region has 89 species, 51 genera, 31 timber trees, 4 small trees, and 54 shrubs. *Calycanthus*, *æsculus*, *cercis*, and seven other genera, have no representatives in the mid-continental flora, but are common to Atlantic and Sierra forests. A multitude of similar comparisons might be made if we had space.

THE POPULAR SCIENCE MONTHLY FOR AUGUST.—This is our most valued American exchange, and is always carefully read, though much of it is not of such a nature as to be easily separated from the con-

text in quotation. An article on "Dry-rot in Timber" should interest all students of vegetable existence. The *Popular Science Monthly* says: "When the moisture in wood begins to ferment, whether it be the natural sap, or the water absorbed by seasoned timber, the conditions are ripe for the inroads of dry-rot. The immediate agent of destruction in this case is of vegetable origin. It takes its name from the dust to which it reduces timber. This vegetation belongs to the natural group of fungi, which is made up of plants having distinct vegetative and reproductive systems, and their best known representative is the common mushroom." The only parts of a mushroom which are common to all fungi are the mycelium, or thready, interlacing portions which grows underground, and the minute, microscopic spores of which are cellular in structure, and so small that thousands of them are required to form a body the size of a pin's head. The fungi differ among themselves in many ways; but mycelia and spore production always occur in them and are their essential characters. Potato-rot, the yeast and vinegar plants, mildews, rusts, and smuts of grain, and molds of all kinds, are part of this immense group. This article further describes the conditions under which dry-rot attacks timber, and names the fungi producing it. *Merulius lacrymans* is the most common, beginning with interlaced white threads, and shedding a red powder over the surface. *Polyporus hybridus* is the enemy of oak timber. An article on "Removal of Inherited Tendencies to Disease," by J. R. Black, M. D., ought to be widely circulated.

THE GARDENER'S MAGAZINE.—This valuable journal, conducted by Shirley Hibberd, Esq., moves on its usual course, gives full reports of British horticultural exhibitions and meetings, and a large amount of suggestive reading. A leading article on the "Great Public Aquarium" at Birmingham gives a history of the gradual growth in aquarium knowledge during the past forty years.

THE AMERICAN AGRICULTURIST.—The July number of this old favorite said so pleasant a word about the CALIFORNIA HORTICULTURIST that we at once began wishing our offices were side by side so that we could slip in for a friendly chat at lunch time. Then, before we knew quite what to say about July, the August number came along. We see that Mr. Judd is "out among the farmers" getting practical notes, and we are glad to have a look at the Edelweiss (*Leontopodium alpinum*) which is figured and described.

THE RURAL NEW YORKER.—Our readers interested in farm or garden are invited to send for the Fair number of the *Rural New Yorker*, 78 Duane Street, New York, which will be mailed to them without charge, September 1st. This number will have twenty-four pages, and a substantial cover, many original engravings, and articles by the best

writers in the land. The special feature, however, will be the announcement of the *Rural's* great free seed distribution, which is claimed to be worth more than the subscription price of the paper.

A NEW COMER.—*Gardening* is a new journalistic venture of Mr. Robinson's, and, we confess, is a real surprise and marvel. It is a sixteen-page quarto, weekly, illustrated, and furnished at the laughably minute price of one penny per week. It is already called a success, and must find room, even among the many horticultural publications of Merry England. We have also received the first monthly part of *Gardening*. The address is 37 Southampton Street, Strand, London, W. C.

THE CANADIAN HORTICULTURIST.—The Fruit Growers' Association of St. Catharines, Ontario, publish this neat monthly, now in its second volume. We notice that a botanical society is being organized.

We are in receipt of a pamphlet containing an address by Robert E. C. Stearns read before the California Academy of Sciences. The title is "In the matter of certain badly treated mollusks." It finds mistakes in descriptions of mollusks in Victor Hugo, in an article in the *Popular Science Monthly*, in *Harper's Magazine*, and, alas! even in Webster's Unabridged. Whom are we to trust? We really did have such childlike faith in Webster.

In Brazil the coffee plantations, like the vineyards of France, are threatened with destruction by the ravages of a minute parasite. The roots of the plants are found covered with knots and swellings like those seen on the roots of the grape-vine infested with phylloxera. In these swellings are found minute nematode worms one-fourth of a millimetre in length when fully developed. A single root often contains as many as fifty million of these parasites. —*Popular Science Monthly*.

The *Queenslander* speaks of coffee planting as making good progress in some parts of Australia. From an article in the same paper, speaking of some of the wild flowers of that land, we clip the following: "On the hillsides may be noticed large patches of a tall daisy-like flower, *Calotis dentex*, and the still taller *Helichrysum bractentum*, or Immortal Flower, the large, dry flower heads of which are used for decorative purposes. Rambling over the rocks to which it fastens itself by rootlets, our lovely *Hoya Australis* will be seen in perfection. Long before the umbels of star-like flowers are seen among the thick fleshy leaves their delightful fragrance will be noticed. One could wish that so lovely a plant had no evil qualities, but we are told that a number of sheep have been poisoned by feeding on it."

FERNS IN A FIREPLACE.—We see in that good and widely circulated journal, the *American Agriculturist*, an idea which we copy for the benefit of

our readers. It is a suggestion how to make a fireplace ornamental in summer by filling it with growing ferns. Let the bottom be fitted with a galvanized iron pan, and on this pile up stones, filling the interstices with soil, and planting the ferns, then covering the earth with moss. Or the ferns might be put in pots and arranged, the taller at the back and the small ones in front. Ferns love shade, and the only care will be watering.

D. D. T. Moore, formerly editor of the *Rural New Yorker*, is now publishing a paper called *Moore's Rural Life*. The number before us is very readable.

Catalogues, etc., Received.

[We shall acknowledge the receipt of all Seed or Plant Catalogues, Pamphlets, Reports of Horticultural Societies, Agricultural Reports and similar documents.]

Mr. J. B. Hickman, the noted bulb collector of San Juan, San Benito County, sends us his new list for the coming season. It is very nicely done, and includes a wide variety of plants, seeds, etc. There is a fine variety of Calochortuses, Liliiums, etc.

Wm. C. L. Drew, of El Dorado, El Dorado County, who has recently been East on a long, and, we hope, a prosperous business trip, has been getting out a bulb catalogue. It is creditable to all concerned, and shows that there is a growing interest felt in our beautiful native bulbs and flowering plants.

Peter Murray, Lincoln, Neb. Catalogue of Greenhouse and Bedding Plants.

Report of the Fruit Growers' Association of the Province of Ontario, Canada. A 60-page pamphlet of interesting articles.

Hovey's Illustrated Catalogue of New and Rare Plants, 1879. Hovey & Co., Boston, Mass. A fine assortment of Begonias, and a good catalogue.

J. W. Adams' Brightwood Nurseries, Springfield, Mass. Catalogue of Fruit-trees and Circulars.

Chas. T. Starr, Pleasantville Greenhouses, Avondale, Chester County, Penn.

Register of the Johns Hopkins University.

Premium List of the Indiana State Fair.

C. S. Van Goor, florist, Haarlem, Holland. Wholesale catalogue of bulbs.

J. J. Van Loghem, Haarlem. Catalogue of bulbs and flower roots.

Miller & Hunt's special monthly list of Roses. Wright's Grove, Chicago, Illinois.

C. E. Allen's Spring Catalogue. 64 Canal Street, Brattleboro, Vermont. Seeds, plants, and dry flowers and grasses.

Joseph W. Vestal's Descriptive Catalogue. Rosedale, Cambridge City, Wayne Co., Ind.

Woolson & Co.'s Descriptive Catalogue of Hardy Perennial Plants, and Price-list. Passaic, N. J. P. O. Box 180. A plain, neat catalogue, advertising a very full and desirable lot of hardy plants.

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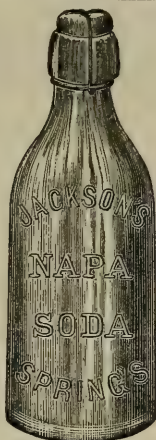
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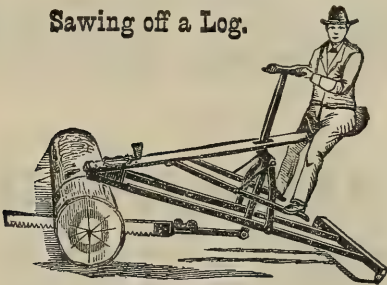
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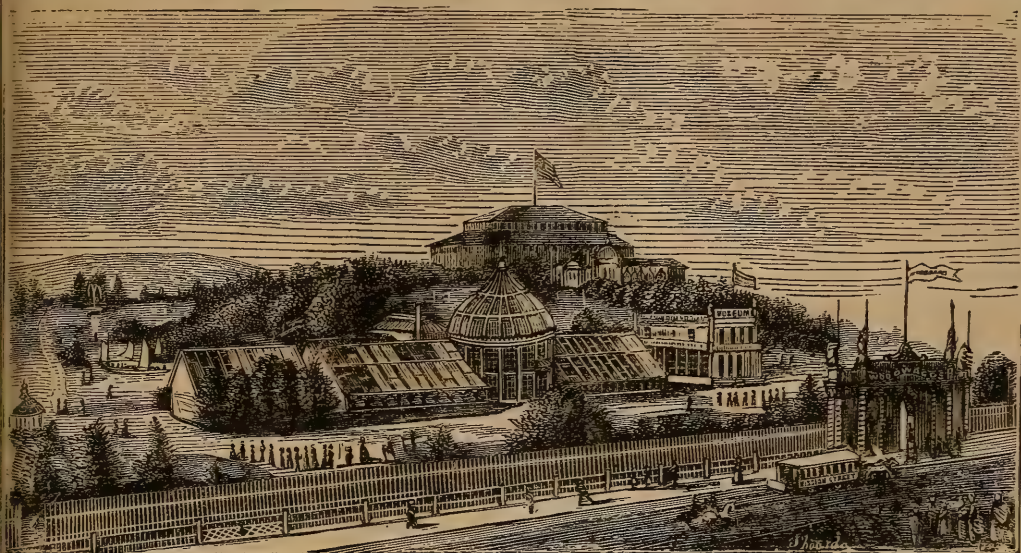
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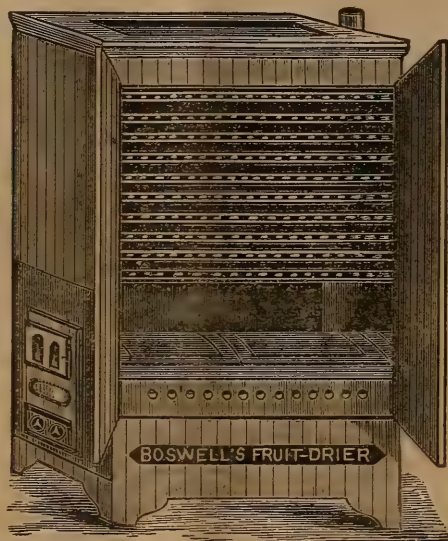
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OCTOBER, 1879.

No. 10.

THE



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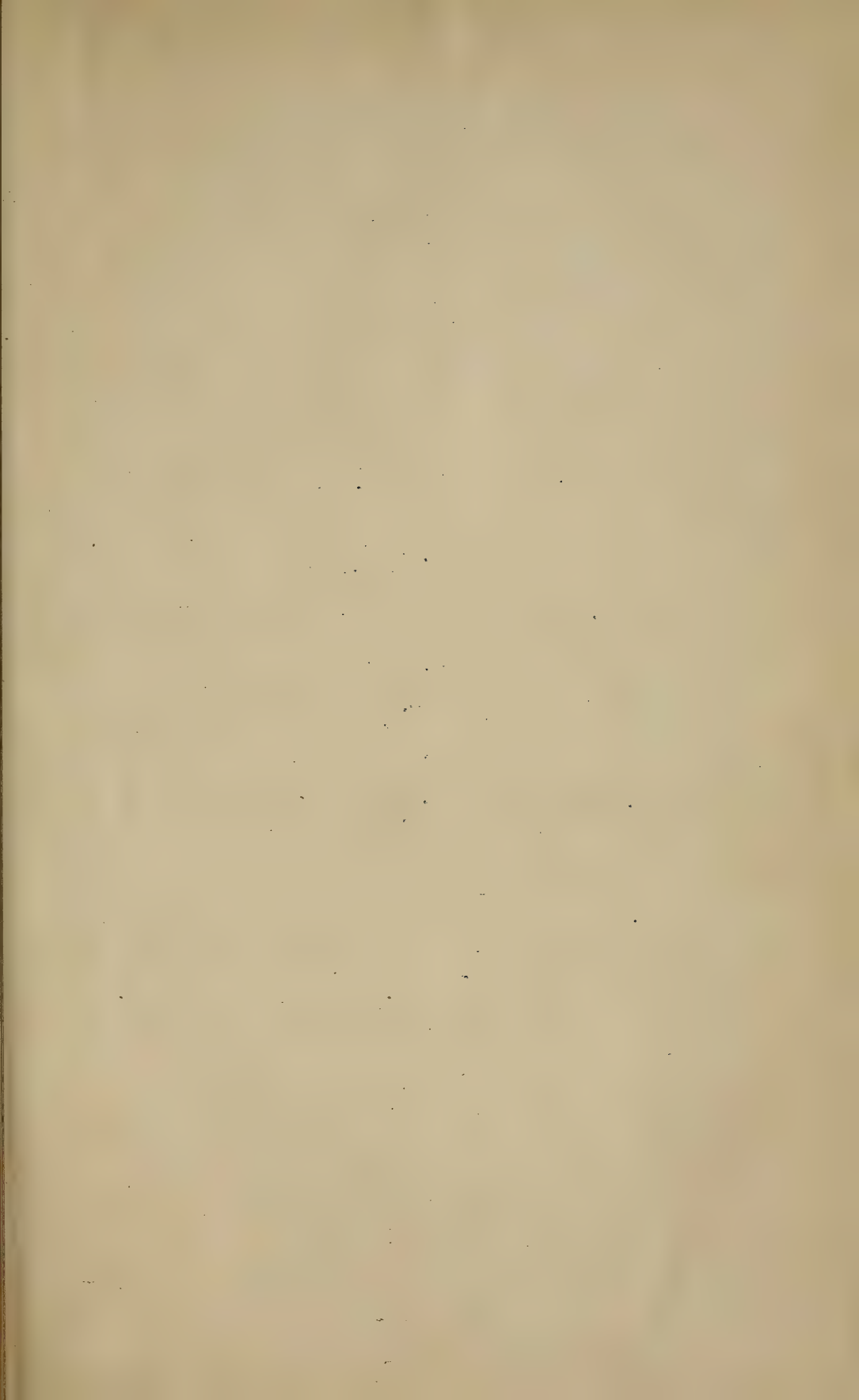
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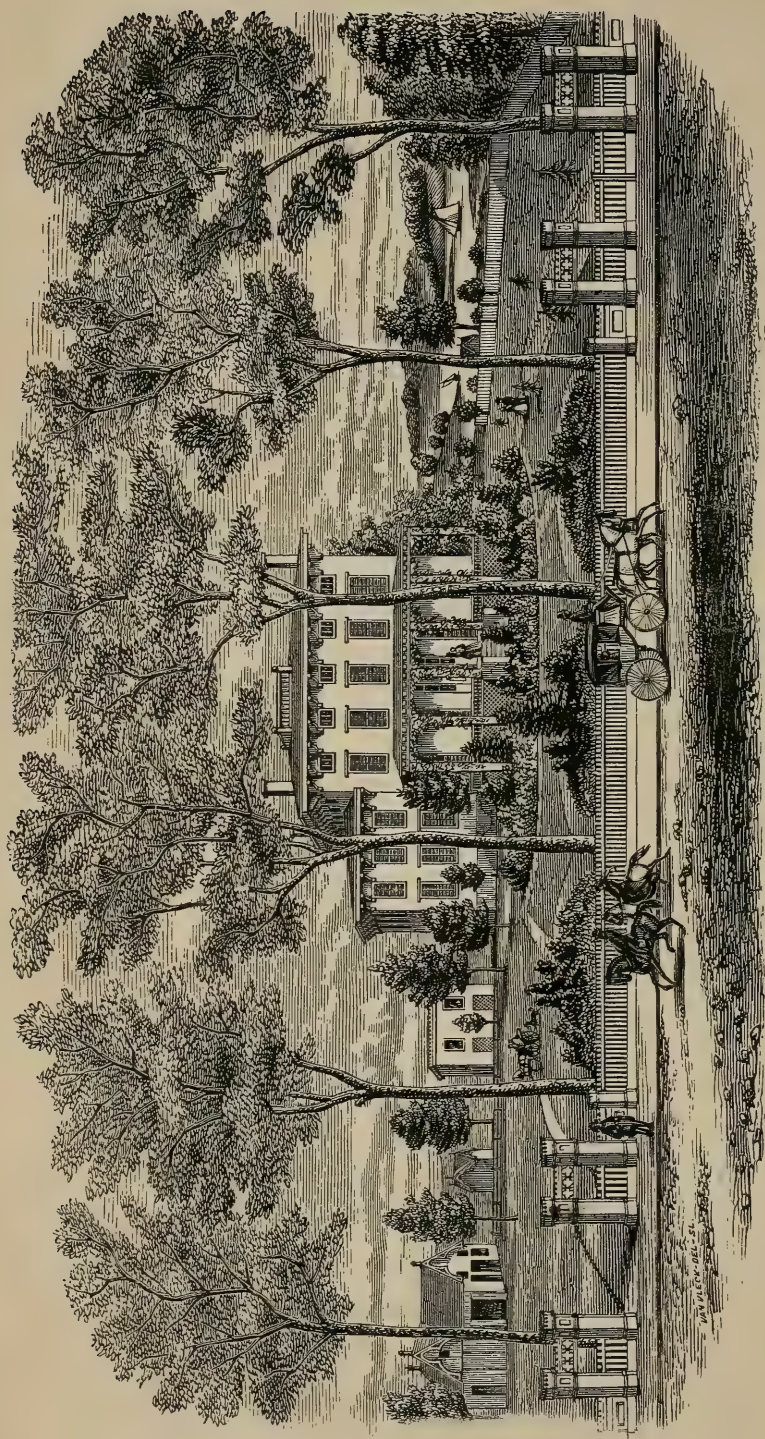
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FLORAL MAGAZINE.

VOL. IX.

SAN FRANCISCO, OCTOBER, 1879.

No. 10.

Contributed Articles.

THE TREES OF NEW ZEALAND.

By S. M. CURT, M. D., New Zealand.

You ask me to write for your readers something about New Zealand, and its vegetation. I should be very glad to do so, if I thought that anything I could write upon these subjects would interest those who might read it, but it will be very difficult to give a just idea of this wonderful land, and its peculiar fauna and flora; its perpetual snows, gigantic glaciers, moraines, cataracts, waterfalls, and rapid rivers; its ever-green forests, treeless plains, and shifting sands; its active volcanoes, and geysers throwing boiling water two hundred feet into the air; its sulphur, and other mineral springs; its alum, and other caves; and its wonders of Bohemahana with white terraces at one end of the lake, and pink terraces at the other, with water of all temperatures, contained in numerous basins sunk in these terraces, and filled to the brim, in which basins those who wish to bathe can select water at the temperature they desire. New Zealand has earthquakes in the volcanic regions; islands of sulphur, naphtha springs, gold, copper and coal mines; bays, in some of which a

vessel, when entering, finds, after passing through a narrow entrance, that a large natural harbor opens out, where you can fasten your vessel to the trees growing from the precipitous sides of its steep cliffs, but the bottom is too deep for anchorage, while the cliff runs sheer up from sight a hundred to two thousand feet high. The climate of New Zealand is so varied, that in the north the Orange, Lemon, and Guava ripen in the open ground, while in the south the fruit and vegetables of a cooler land come to perfection.

While these are some of its climatic peculiarities, its fauna was so strange that, at the advent of its present aborigines four hundred years ago, it had no quadrupeds but a small rat, and some small lizards; yet one of its birds, the Moa (*Dinornis gigantea*), was larger than an ostrich, while another of its birds, the Kiso (Apteryx Australis), had no perceptible wings, and used to catch and live on worms by driving its long bill into the ground for them, and only did this at night, sleeping during the day time.

The aborigines, who call themselves Maoris, are a branch of the Polynesian family, which are now spread over all the islands of the Pacific, extending from the Malay peninsula to Cen-

tral America. They are the remnants of a very ancient people, who long since inhabited a continent that existed where the Pacific Ocean now is, and who now inhabit islands that are the tops of mountain chains, and high plateaus, the last remnants of this gradually sinking continent, whose inhabitants were once so civilized that they executed works in stone—temples and aqueducts—the remains of which now stretch across New Zealand, from the ocean on one side to the ocean on the other, the relics of a former age, and an elder civilization.

In a country with a climate so varied, and localities and circumstances so different, it is not surprising that the flora is of such a peculiar kind and differs so much in different localities. In sheltered forests and damp ravines, great numbers of ferns of many genera and species are to be found. The great *Cyathea dealbata*, called by the natives "Ponga," and by the white people "Silver Fern," from the white under side of the fronds, may be found from forty to fifty feet high, with straight, erect trunk, slender and almost black, with fronds radiating at the top over a space of twenty to thirty feet, flatly spread out, one layer over the other, and the young fronds developing more erect from the centre. In a somewhat similar situation is to be seen the magnificent *Cyathea medullaris*, called by the natives "Korau," and by the English colonists "Black Fern," sending up its trunk, which is a foot or more in diameter, thirty feet high, and clothed with black hairy coatings, is crowned with an arching head of fronds radiating twenty or more feet from the trunk and covering a space of from thirty to forty feet in diameter. The bright green color of the fronds, arranged along the black frond-stalk as a midrib, all gently

undulating in the passing air, make it a very striking object to the beholder, while by the natives its young undeveloped frond-stalks are cooked and eaten when food is not otherwise obtainable, as is also its white medullary centre. Both of these parts contain much starch. He also uses the mature fronds to cover his huts, and to form a sleeping place.

On most hillsides and alluvial bottoms covered with vegetable mould, grows the great *Fuchsia excorticata*, called by the aborigines "Kotukutuka," and its fruit, which it bears in abundance, is called by them "Konini." It is very sweet and agreeably flavored when ripe. To those who only know the *Fuchsia* as a small bush it is a revelation to see a great tree fifty to sixty feet high, with a branching head covering a diameter of fifty feet, and a trunk three feet through, with a light brown paper-like bark, which it is always shedding (giving it its specific name), and thickly covered with blue flowers having a tube which is green inside. The flowers are succeeded by the fruit at a later season.

When passing through the primeval forest, the traveler will sometimes come to a space where the trees stand further apart, grow taller, and their tops are seen far overhead. In such a situation his gaze is arrested by a beautifully regular shaft gracefully sloping upward for twenty or twenty-five feet, and upon its top the most admirable circle of compound leaves spread out ten feet from the column with the most elegant curves imaginable, while at certain seasons a large bunch of woody fruit stands nearly erect on the top. This is the only Palm (the *Areca sapida*, called "Nikau" by the natives) indigenous to New Zealand, and it is being destroyed recklessly by both aborigines and Eu-

ropeans, both cutting it down to obtain its top of undeveloped, or unopened, leaves, which are white and crisp, with a taste like chestnuts, and are good to eat, either raw or cooked. Thus it is only in unsettled localities, and untouched forests, that this lovely Palm is seen in its best aspect and fullest form.

When sailing along some of the shores, or entering the northern harbors, the eye is attracted by a fine tree of the natural order Myrtaceæ, which grows nearly down to the edge of the sea. Its large myrtle-like leaves are often three inches long, and one inch or more broad, and the magnificent crimson flowers, which it bears in profusion, make it a most gorgeous object, while its graceful branching head and pleasant shade of green foliage render it a favorite of all who admire natural beauty.

Another tree is the *Metrosideros tomentosa*, named by the natives "Pohutukawa." It is from forty to fifty feet high, and the wood is of fine color, greatly esteemed for ship building, used for knees, ribs, etc., and also for other purposes. Another near ally, the *Metrosideros robusta*, whose native name is "Bata," is met with in the primeval forests of the North Island. It commences existence as a thin climbing plant, and runs up to the top of the tall forest trees, sending out laterals round the tree upon which it climbs. These laterals, by a process of natural inarching, grow into the stem of the climbing plant, and these stems, continuing to increase in size, gradually grow round the tree they climbed upon until they meet, when they grow together, and entirely surrounding and compressing the tree kill it; and then, continuing to increase in diameter, gradually force out the substance of the formerly inclosed tree, which becomes a powder

or even vegetable mould. At last its trunk becomes solid, and is of large diameter when the Bata trees are very old; but they are, when younger, hollow, or are only a kind of skeleton, having the upright stems united by the laterals grown into them. When mature this is a magnificent tree ninety, and often over a hundred, feet high, with a bole or trunk, hollow or solid, of from fifteen to twenty feet in diameter. Its leaves are oval, and like a myrtle; the flowers are red, and it is a very grand object when in bloom, with its head standing out above the neighboring forest trees. The timber is very strong and durable, of a red color, and makes as handsome furniture as mahogany, and its branches are cut into the timbers and knees of ships. The wood is so inflammable that it burns green, and when the traveler in the forest gets benighted he seeks out a Bata tree, and strikes a match, with which he ignites the bark which is constantly shedding off in strips like layers of paper. This bark at once ignites, and sets fire to the tree, which flames and roars like a furnace, and gives off heat enough to warm the air for a long distance round. This fire will continue to burn, according to the size of the tree, for a few hours or many days, and the smoke serves as a guide in unexplored forest travel. But it is a pity to burn these noble trees, for if they are carefully cleared around they make grand trees for shade and ornament. The aborigines often deposited the bodies of their relations in its tops and among its branches. Numerous Epiphytes, *Astelias*, and parasitical plants grow on old trees.

In New Zealand there are several handsome conifers. One, *Dacrydium cupressinum*, called by the Maoris "Bimu," is a very handsome tree. Its Cyprus-like foliage droops down in

graceful festoons, while its blue and red fruit, which is thickly scattered over its branches, adds to its beauty. It grows from 80 to 130 feet high, and has a trunk from 3 to 9 feet in diameter, which when sawed up into boards and scantlings either serves for building purposes, or if well chosen for its grain, makes fine furniture wood, its rich veining when polished coming out very beautifully.

Another tree that grows in close proximity to the latter, is the native "Rewarewa," known by botanists as *Knightia excelsa*, and by the colonists as "Honeysuckle," so called from its abundant and beautiful red flowers, which are thought to resemble the honeysuckle blossom. This tree grows from sixty to eighty feet high, and from a foot to two feet in diameter. It is easily split, and is divided into nine feet rails for fencing purposes; but when used by the cabinet makers, it will make most lovely work. So also does the *Podocarpus spicata*, or in the Maori tongue "Matai," a conifer that has small leaves somewhat like yew leaves, the wood of which when polished is like satin wood, but when used for bridges, piles, house blocks, fence posts, or other weather-exposed situations, is found to be very enduring. In these exposed situations the wood becomes very hard, and dark colored. The tree grows about seventy feet high, with a spreading top and branches.

Another tree of the same family is the Totara—*Podocarpus totara*. The heart wood of this tree is much used for bridge piles and weather boarding for houses, and when in this and other exposed situations, it will last from 20 to 40 years, depending upon the season at which it was cut down and its maturity. While growing it is a fine yew-like tree, with leaves larger than the yew, and of a much lighter green color. It has

sometimes large excrescences growing upon its trunk which, when cut up into boards for the cabinet makers, and polished, is of a brown color, with a curled, twisted grain, something like bird's-eye maple, but more marked, and of much greater breadth and extent.

I must now mention another conifer, the Kauri or *Dammara Australis*, which only grows in the north of this island, but there attains a height of 120 feet and 10 feet in diameter. This magnificent tree is thought of so much commercial value when cut up into timber, that it is fast being destroyed, millions of feet going away every year from each of the saw mills, and no effort is being taken to replant it, although it is both ornamental and useful. Its fine, straight stem sends out branches very symmetrically, and these are clothed with lanceolate leaves, three inches long, of a glaucous green color. A grove of these trees is a glorious object, but this will soon pass away, as it has done in the north, where now, over a barren waste, the gum digger roams with his pointed iron, turning the ground to find the masses of the Kauri gum, which he digs up and sells to the merchant to be exported for the varnish makers. The forests used to exude resin-like gum, and drop it upon the ground until it had accumulated in masses, which, getting covered with the soil, is now all that remains of the former evergreen Kauri forest.

Another fine tree of a different natural order is the *Vitex littoralis*, or "Puriri," a tree 50 to 60 feet high, trunk $1\frac{1}{2}$ to 2 feet in diameter; leaves on petioles 2 to 4 inches long; leaflets 3 to 5, petioled oblong, or obovate, acute, glabrous, 3 to 4 inches long; panicles axillary, spreading, 4 to 8 flowered, color pink, or red; fruit the size of a cherry, a bright red in color, and hangs on while

the flowers keep forming in other axils through the year. It is a lovely tree with a round, regular shaped head, and forms a most ornamental tree for pleasure grounds as single specimens. This tree also is being exterminated, as the wood is almost indestructible by time and weather, either in wet or dry situations, and it is therefore much used for piles for wharves in sea water, where other wood would be quickly destroyed by borers and other enemies. This wood is very hard, polishes well, and makes fine furniture.

In damp parts of the forests grows a plant that is botanically known as *Frey-cinetia Banksii*. It is a *Pandanus*, and may be described as a lofty climber, with leaves 2 to 3 feet long, grass-like, notched on the edges; spikes cylindrical, 3 to 4 inches long, surrounded by white fleshy bracts; fruit, an oblong green spadix, consisting of a multitude of literally compressed carpets about half an inch long. The inner leaves are thick, white, fleshy, and sweet. These inner leaves, as well as the flower, are eaten by both natives and colonists, who look upon it as a delicate fruit. It is a very singular plant and its stem climbs up the loftiest trees, and, growing in masses, it gives a distinct and jungle-like character to the places where it is found. It would, if carefully cultivated, make a rare, curious, and valuable fruit, very distinct from anything else. I have already sent seeds of this curious plant to friends in California, so that it will be possible to test its merits there.

Another curious binding and climbing plant that gives a peculiar character to the forest is the *Rubus Australis*; it grows from tree to tree as well as ascending 80 or 90 feet high. Its stems are several inches in diameter; its leaves and smaller branches are covered with

strong recurved prickles; its fruit is very insignificant and harsh. Where it grows it makes traveling very difficult.

In wet parts of the forest are to be found groves of "*Kahikatea*," or white pine of the colonists, the *Podocarpus dactyloides*, a tree that grows 150 feet high, and 4 feet in diameter; its timber is used by builders, but it will not bear exposure to the weather. The tree is straight and handsome, and, where it has room to develop its lower branches, is a fine pyramidal tree; but in groves where it grows close together, it has no lower branches for 70 or 80 feet.

When the Maories first came to these islands of New Zealand, among other things they brought the nut or seeds of the "*Karaka*," or *Corynocarpus laevigata*, and they planted them wherever they cleared the forest away for their cultivated grounds. We therefore find this beautiful tree, with its shining, polished leaves, like a laurel or magnolia, growing in those places where planted by the natives. The form of the head is round and regular, and in the spring it is covered with flowers of greenish white, which in autumn are replaced by long drupes of yellow color, the size of damsons, having a rich perfume. The flavor is something like a poor banana, but the nut inside it is poisonous until it has been soaked in water for some days, when it is taken out and roasted; the natives use it as a part of their food. So handsome is this tree that it is well worth planting in parks and avenues. It attains a height of 40 feet or more; probably if it was cultivated for its fruit it could be greatly improved and become of much value.

THE best time to prune Cherry trees is, in California, during the months of September and October. Some prune soon after the fruit is gathered.

LILIORHIZA LANCEOLATA AND OTHER NATIVE BULES.

By J. B. HICKMAN, San Juan.

Liliorhiza lanceolata is among the earliest of our spring blooming bulbs, with a habit and appearance slightly similar to the spring snowdrop, which is so much prized in the Eastern States. Its flower stem, which has but few leaves, is from six to fifteen inches high; the scattered leaves run into bracts near the summit, from whose axils spring the flowers, which at first appear to project outward, but gradually droop with age. I have rarely seen eight flowers in the raceme, the last blooming as the first fades. The six leaves of the perianth, which are white with green veins, at first form a cup about as deep as wide, sometimes one and a half inches each way, but as the flower ages the tips turn back and form a bell-shaped blossom with a reflexed margin. The odor is rather unpleasant to me. The blooming bulbs often grow at a depth of a foot or more in stiff adobe, and as the bulbs are composed of several loosely coherent scales, it is often very difficult to obtain them entire. The bulbs are a clear waxy white, and sometimes attain a diameter of one and one-half inches.

Death Cammass, or the White Cammassia, is nearly related to the blue Cammassia esculenta; it grows often on open sandy ridge tops, but is also found in dry spots in shady ravines; its bulbs are generally deep in the ground, the base in some stiff, moisture-retaining soil, so that the base of the bulb is often injured in digging. They are often five inches long by two in diameter. In lighter soils the spike of bloom is large, often containing upward of 100 florets, and being nine inches long by four in diameter; while in heavier soils the spike is sometimes compounded, and contains several hundred florets, which

are white, and about half an inch in diameter. The spike often reaches three or four feet in height. The cluster of leaves from the bulb often reaches eighteen inches in height, each leaf being about one inch across.

Ordinary flower pots would hardly do for either of these bulbs; but if any one is inclined to cultivate them, an ordinary five gallon coal oil can will do very well, and if arranged as follows will give quite a variety of bloom. First, punch a few holes in the sides and bottom of the can for drainage, and fill to the depth of five inches with bits of rock, a little sand, and the rest adobe soil, or clay; on this set the two bulbs above described, and fill half of the remainder of the can with a mixture of sandy loam and adobe; on this set several bulbs of *Calochortus venustus luteus*, a few *Brodia grandiflora* and *Tritelia laxa*, then another layer of dirt an inch deep, and sprinkle a few *Callioproa lutea* and *Allium acuminatum*; another layer of dirt and then a few bulbs of *Calochortus elegans*; fill the can up with the soil, sink in the ground in a sunny place, and wait for the result.

The root of the Death Cammass is said to be poisonous; all the other bulbs except the *Liliorhiza* are edible, though hardly attractive diet to any but Indians, I should judge. The *Liliorhiza* may be good to eat, but I have never seen it so used; to the contrary, a neighbor tells me its stalk and flowers are poisonous to horses.

A can similarly arranged, but with a lighter soil, would answer well for a collection of *Cyclobothra*, *Frittellarias*, and some others that do best in the shade. *Frittellaria lanceolata* would do well with the first lot if planted about one-third of the depth of the can.

SAN JUAN, Cal., Sept. 1879.

WATER AS A PROTECTION AGAINST FROST.

GUSTAF EISEN, Fresno, Cal.

Perhaps it will interest some of your readers how we saved our orange and other tender trees from last winter's severe frosts. You know that from time to time we find articles in the leading papers, by very learned men indeed, in which we are told numerous ways of saving tender trees. Some of these ways are evidently the result of common sense; others, and perhaps the greater number, are unhappily not so. The old way of covering the trees with straw mats, or any other material, to keep the frost out, is evidently the best and safest of all, but can not always be put in practice. It is quite a job to cover 800 orange trees every year, especially if they have reached any kind of size, not however being large enough to withstand the frost altogether. Another safe way is to smoke the orchard constantly during frosty nights, but such a plan is both expensive and laborious. We, in Fresno, have sometimes frost, and heavy ones too, for three or four weeks in succession, and of course smoking is out of the question entirely. To smoke a vineyard or orchard in the spring, during occasional frosty nights, is very effective, and is resorted to on many places, especially in France, but to keep smoking during several weeks is not practicable. A very general practice in France and Spain is to make long heavy ropes of straw, wet the same and carry them over the trees, tying them here and there to the branches, and at last insert the ends of the rope in a large tub of water. The rope will keep constantly wet and attract the frost.

Now we have always been taught that irrigation of the trees in fall and winter

is very injurious, and should never be resorted to. Alas! for the theorists; those of my neighbors who followed their advice last winter lost heaviest. Myself and a friend of mine, Mr. Mac-Niel, had better luck, and I will now shortly tell you how it was. Last summer I had planted a large circle in front of the wine cellar with rather tender trees, such as Araucarias, etc., which generally are supposed to be unable to withstand our winter climate. Not knowing any better, of course, I kept the water away from the trees from the first of October, and the ground got well dried up. As you know, we had very severe frosts about Christmas time, and the trees had been left uncovered. The day before the heavy frost there was a large break in our irrigation ditch near by. The water flowed down, and, to my great dismay, covered a part of circle where I had my tender trees. Of course I thought they were all gone. The water standing round the trees froze solid, and just as far as the water had reached the trees were saved. The irrigated ground kept moist the whole winter, and after every frost presented the appearance of a heavily frozen surface.

One day in the early spring I visited Mr. McNiel and incidentally told him of my experience. "Why," he said, "that is just mine too, come along and you will judge for yourself." And so we went out through the peach and almond orchard, one half a mile or so, down to the orange trees. Last fall Mr. Mac-Niel had 800 orange and lime trees alive, all budded, and about five years old. Now there were only 250 left alive. "Well," said my friend, "a day or so before the heavy frost, the boys on Chapman's forty acres took a notion to irrigate their sheep-pasture, and did not care a bit for the big break in their

writes an interesting letter to the California Horticulturist giving us a personal observation on the use of water as a preventive of frost injury. The writer is a fine horticulturist and a timely one.

over

ditch. Accordingly I found, to my great vexation, half of my orange trees flooded next morning. The water had run here and there in the lowest places, of course, and, look here, you may see it plainly, wherever the water did go, there the trees are alive. The dry places were occupied by trees which you now see dead to the roots." And indeed my friend was right, the water had saved our trees, no mistake about that.

And now, why can not every body with facilities for irrigation do the same? My advice is keep your trees dry in early autumn, so green wood can get ripe, but give plenty of water before the fruit comes, and you, as we did, will save the trees.

Stok
FRESNO, August 31, 1879.

THE ROOTS OF PLANTS IN CALIFORNIA

By JAMES HUTCHISON, Oakland.

California native trees and shrubs, on account of our dry climate, send down tap roots to a great depth in search of moisture, hence they have but few fibrous roots. It is not an unusual circumstance to find the tap roots of even small plants reaching down twenty feet. I have heard of alfalfa having roots twenty-five feet long. Plants from other climes, when planted here, soon assume the same tendency. It is much more laborious, therefore, to remove evergreens from the ground in California than it is in moister climates.

I remember, when a young man, I was selected to do the planting in Princess Street Gardens, Edinburgh, Scotland. The evergreen trees and shrubs came on the ground like a load of hay, tied up in bundles, without any ball or covering of any kind to the roots. We planted all winter, and I do not think a single plant died. If California nurserymen could do the same successfully,

we could afford to sell from two to five cents a tree cheaper than we now do. Take for instance *Cupressus macrocarpa*, or Monterey Cypress, two years old. If well grown they will run from two to three feet in height. To insure their safe removal, they are taken up carefully with a good ball and a piece of sacking tied firmly around the ball—the labor and material used costing not less than two dollars per hundred; larger trees, of course, cost much more.

A few years ago I was going through the nursery grounds of my old friend and prince of florists, Peter Henderson, New Jersey. We came upon four or five men taking up carnations with balls preparatory to winter flowering. I observed them as they inserted their spades, and lifting the plants carelessly pitched them into a wheelbarrow as if they were sods. I shook my head and remarked to Mr. Henderson "you could not do that in California." He asked me "why not?" I answered "the roots go too deep with us." * Quick as thought he saw the point and said, "ah! I understand."

TOLD BY A PANSY.

By CHARLES B. SHINN.

I think I began life as a seed. That means that I was folded and coiled up in a shelly case—so tightly, indeed, that I could hardly breathe at all, and only dimly hoped that something would happen some day.

"Choice Imported German Pansy Seed," the boy who gathered me said, with a wink to his companion, and, after awhile, a man wrote that on the little flower-bag, although he knew it was not true, for I grew in one of the Middle States. It nearly broke my heart to go out into the world under false pretenses, but I could not help the matter in the least, either by laughing or by

crying. I promised myself, though, that I would do my very best, and try to beat even German seed, if ever a chance came.

Long and weary months went by, and nobody seemed to want the little brown paper bag in which I, and a number of my relatives, lay so impatiently hearing the wind blow, and the rain patter on the earth outside. Indeed, I began to almost wonder what we were good for. Then, at last, a little, chubby-faced school-boy trotted in, putting the heels of his new boots on the floor with a great deal of noise. "I want 'ee seed" he said, "of litty flower like a face, an' so big," holding up his thumb and finger in a circle. So of course we were sold, and, at last, one blessed morning in spring, the little child shook us out on his chubby palm, and said we were "cunnin' litty specks," and made a little trench with the end of his chubby finger, and let us slip into the moist soil. How very cool and fragrant it was!

"Now I am going to get out," I said, and it seemed as if everything helped me. But my poor brothers were most of them covered too deeply, for no pansy seed can climb through more than an eighth of an inch of soil. Then, too, the earth was not made fine enough, and seeds like it to be almost like dust, and a little sandy, and shaded a little. Still I did not waste any time, but began pushing up, beside a little pebble which was near me. And soon, very soon, it was light. Ah! I can not tell you queer, movable, human folk how that first ray sent the pulses dancing clear down to my roots, in a perfect jubilee. Then, first, I felt quite sure I should blossom in the fullness of time.

But the children ask, with sweet directness, how I got out of the seed. Now, as I am a purple pansy this min-

ute, I can not tell everything. There are secrets, you know, my dears. But the rain began to tap at the door of my cell, and I felt it growing larger and larger, and I grew with it till I really think I tore the yellow case clear across. Then one part of me—which wise men call the radicle—grew down into the earth, for I was hungry; and another part, called the plumule, went towards the light, for I was cold and lonesome.

So the children think that seeds are curious things, do they? Well now seeds seem natural enough to me, but I think that children are much more wonderful. I will tell you one secret: seeds love to have children plant them, and flowers love the ministry of children. Yes! pansies, most of all, love to whisper to children, and watch their sweet faces. It is thinking about children, and loving them, which makes pansies look so wise and motherly. Once, the birds tell me, there was a Golden Age upon this earth, and then children and pansy bushes were just the same size, and we used to sing the little folks to sleep under our clustering leaves, and whisper so many truths and fancies that for whole centuries every man was a poet, and loved us to his dying day. I have a dim feeling, which I can't quite express, that children might, if they would, bring that Golden Age back again after awhile.

When I first came out of the ground I unfolded two veined and pointed leaves, and next two crimped and softly rounded ones. I have made so many leaves since that it is an old story—but I was very proud of those first leaves of mine. I think boys feel that way about their first love-letter, and poets about their first verses, and little girls about the first doll, and proud young fathers about the first baby. Still I have never fully known where the pattern of those

first leaves came from. I had never seen another pansy, and the only leaves near me were wild turnip, which I considered vulgar—and carnation, which seemed too small and babyish. But I made my leaves in my own way, and when I saw another pansy, I knew that mine were made rightly.

Getting ready for blossoms is the next work of pansies, and of children. It was so tiresome to search in the soil for so many different things—there were fibres, and blood-material (that's what we call sap), and all kinds of colors, to be found, and to be carried upstairs into the sunlight. Sometimes all there was of me was digging and pulling underground, and sometimes the whole pansy-heart was in the painting of the first bud. Then at last the birds sang overhead, and the breezes stopped to look, and the sunlight whispered its gladness—for I had a wide-open purple flower, without a flaw anywhere. Once I heard a wise man say that if children were only busy, and gentle, and full of hope, their lives would bud and blossom after awhile, and it is really true I think.

But after blossoming comes the thought of the future, and one's duty towards the world. Clearly, if pansies were negligent, and did not make any seed, the moulding of our petals might soon be a lost art. And so I had to make countless seeds, so that the fancy pattern could never be wholly lost.

No! I can not tell you how it is done—how we fashion the little germs, and fold them away in brown cells, and pack them in ribbed capsules. It is not nice to tell all one's secrets. There was a little robin once—a dear friend of mine—who asked me all about it, but I would not tell even her. But this I will say; that pansies, when they are making seeds, are full of a quiet gladness, and

are dreaming forever of what may happen to their children. This one shall bloom in a king's garden—that by the wayside; one shall gladden the heart of some queen of song; another shall rest on the pillow of a nameless child—here a fair woman, standing in the sunlight shall choose a purple cluster, and, carrying it to her studio, paint a modest picture for the quiet walls of home; there a tempted man shall be strengthened by the innocent face of an appealing pansy. Everywhere, we think, our children shall be sweet, and pure, and true to the traditions of flower-land.

I am a little tired, for it is very dusty weather this afternoon, and if you want nice flowers in summer you really must not neglect to shade me. Then, also, the folks have let the ground get so hard around me that I fairly ache all over, as if I were in a plaster mould. May I please have some water? Now if you will only stir the surface a little to-morrow I shall be able to finish painting my new buds before the end of this week.

AUSTRALIAN FORESTS.

By BARON FERD. VON MUELLER.

The prevailing timber-vegetation of all Australia is that of the Eucalypts. To this rule only some parts of the forest tracts of East and North Australia offer exceptions. Of nearly 150 distinct kinds of Eucalypts now known from the various portions of the Australian continent, we possess in Victoria not fully forty species, but of these, again, only about a dozen have any leading interest for extensive utilization and primary forestal care, whether with respect to their wide distribution, their large dimensions, or their fitness for special purposes of artisans. Our principal Eucalypts, according to the degree of their general importance, might per-

haps be arranged as follows :

1. The Red Gum-Eucalypt (*Eucalyptus rostrata*, Schlechtendal).

2. The Blue Gum-Eucalypt (*E. globulus*, Labillardiere).

3. The Ironbark Eucalypt (*E. leucoxylon*, Von Mueller).

4. The Messmate Eucalypt (*E. obliqua*, l'Heritier).

5. The Stringy-bark Eucalypt (*E. Macrorhyncha*, F. Von M.).

6. The Giant Eucalypt (*E. amygdalina*, Labillardiere).

7. The Apple-scented Eucalypt (*E. Stuartiana*, F. Von M.).

8. The Spotted Eucalypt (*E. gonio-calyx*, F. Von M.).

9. The Yellow Box-Eucalypt (*E. melidora*, Cunningham).

10. The Red Box-Eucalypt (*E. polyanthemos*, Schauer).

11. The Swamp Mahogany Eucalypt (*E. botryoides*, Smith).

Reserving a few notes on the dwarfier oil Eucalypts, on the Blackwood, and Wattle Acacias, the native Sassafras tree and the so-called Cypress pines, we may proceed to note a few of the characteristics of the above species of Eucalyptus.

The Red Gum is the most important of all, though it does not rightly belong to close-wooded forest regions, but rather delights in the open country where it forms natural parks, especially on river flats. In its extraordinary durability of wood, even for underground structures or for maritime submerged works, it has only one recognized rival in all Australia, namely, the West Australian Jarrah (*E. marginata*, Smith); but it exceeds that famous species in celerity of growth, and it will thrive even in often inundated places, not otherwise to be readily utilized.

The Blue Gum tree, which is dis-

persed through the southern and eastern regions of our colony, stands unrivaled in rapidity of growth. Foreign countries have seized on this tree to create forests, from which full returns can be obtained in one-fourth of the time needed for rearing woods of oak, pine, and other forest trees previously under culture. The *E. globulus*, moreover, accommodates itself to almost any locality in a most unusual manner, though to attain quickly to perfection, it will need soil of porous depth, and some fertility. We can never have too much of the Blue Gum in our forests, and it must be here, also, our main-stay to provide timber in treeless districts remote from woodlands.

The Ironbark tree, for a great variety of industrial purposes, where toughness of wood is an object, can not be fully replaced by any other of our native trees. Its occurrence, mainly in auriferous geologic formations, has led to its extensive early consumption, and frequent local extermination. It can be raised from seed with the same facility as the other Eucalypts.

The Messmate Stringy-bark tree, for the ease with which its wood can be split into rails and shingles, and utilized for the cruder kinds of carpentry, has become, as a cheap building material, almost indispensable. It regenerates itself readily in its forest haunts; yet the easy ignition of its stringy, fibrous bark often leads to the destruction of older trees by bush fires, which from time to time devastate large areas. The Victorian stringy-bark tree shares the qualities and dangers of its preceding ally. It is generally of easier access, descending to lower regions, but its wood is hardly held equal in value to the preceding species.

Our Giant Eucalypt carries the palm for tallness, not only among Australian

species, but indeed also among the trees of the whole globe, unless its lofty grandeur should be disputed by the West Australia Karri tree (*E. diversicolor*, F. Von M.); or unless in the forests of California the two kinds of sequoias should rear their mighty stems to still greater heights than formerly recorded. But, in regard to colossal massiveness of the trunks, our giant eucalypt, as a rule, can not rival the mammoth trees of California, though ours seem to overtop them, at least in exceptional cases. What completes in *E. amygdalina* its enormous height, is usually a straggling terminal branch, shooting up rather slenderly, whereby our tree is deprived of the towering crown which in the sequoias is dense to the very summit. Nevertheless, *E. amygdalina* must forever be counted with *E. diversicolor* among the wonders of the world. Technologically our giant eucalypt is of immense import; its wood, irrespective of its huge dimensions, is of manifold adaptability, and is comparatively easily worked. The very tall, whitish, straight columns of its stem are developed in the valleys of mountain forests only; in lower regions the species dwindles down to a comparatively small tree, to which the more persistent layers of the outer bark give a very different appearance. In this state it passes as peppermint tree among the colonists, on account of the unusually large percentage of cajuput-like essential oil, the yield averaging two per cent. and at times even more.

Some other eucalypts, particularly those constituting the malce-scrub, for instance *E. oleosa*, provide also eucalyptus oil largely, the products being of a peculiar kind, and available either as disinfectants, or as technic solvents, or for other industrial purposes.

The Apple-scented Eucalypt bears a

vernacular name as inaptly bestowed as those of most of its congeners. This particular species is widely distributed, not always strictly silvan, content with poor soil, and prospering also in stagnant humidity in places not readily accessible to other culture without drainage. An allied species, *E. Gunnii*, bears the vicissitudes of our higher alpine regions, terminating there the zone of woody vegetation.

The Spotted Gum tree of Victoria yields us an excellent building wood, in many respects comparable to that of our Blue Gum. It is, through wide forest districts, interspersed among the other eucalypts, and rises to a very considerable height.

The Yellow Box tree of our artisans, but which might far more appropriately be termed, as its systematic name implies, the "honey-scented eucalypt," though never so large as some of the preceding, is still deserving of the protection of forest officers, on account of the peculiar tenacity of its highly valuable wood.

The Red Box tree participates with it in technic utility. It is recognizable, even at a glance, by the grey hue of its broadish foliage.

The Swamp Mahogany Eucalypt is confined to the valleys of the Snowy River, and to the water courses extending east. Its dark, dense foliage impresses on this umbrageous species a peculiarly noble feature. Its timber is so excellent that the fostering care of the administrators of woodlands should likewise shelter this fine tree, especially as its growth is rather slow.

Turning to another class of plants of prominent utilitarian importance in our forests we meet the renowned blackwood tree (*Acacia melanoxylon*), here attaining for an acacia a huge size, and affording one of the best furniture woods

in the world, and this at little cost. But, though this beautiful species is studded over a great part of the more fertile open ridges, as well as along many of the river banks, an eventual scarcity can easily be foretold. We are more fortunate with the incomparable Tanner's Wattle (*Acacia decurrens*), for nothing can exceed its ease of growth. We must allude passingly to our unique sassafras tree (*Atherosperma moschatum*), and to our sandarac pines (*Callitris verrucosa* and *C. rhomboidea*), among those trees which deserve protection.—*Condensed from pamphlet on Maintenance, Creation and Enrichment of forests.*

Selected Articles.

THE FODDER TREE.

The *Popular Science Monthly* states that the *Calicandra saman*, or Fodder tree, called also "Guango," is found in Jamaica. It is a lofty tree resembling in general habit the English oak. The trunk is thick and branches low. The primary branch divisions are often tree-like in size, and spread horizontally, the upper are erect, spreading. Trees are not unfrequently seventy feet high, the diameter of whose branch expansion horizontally is over thirty feet. The shade which this tree affords is always flecked with sunshine, and the leaves and leaflets close at night so that dew falls on the ground under the branches. Grass grows freely within the overshadowing of its ample branches. It is also a valuable fodder yielding tree. The fruit when ripe is a bright brown pod six to ten inches long, about an inch wide, and a quarter of an inch thick, the substance of the pod consisting of a sugary amber-colored pulp. The pods are borne in great profusion. As they ripen they drop to the ground and are

picked up and eaten with much relish by all kinds of stock. The excellent quality of this fruit as a fodder is evident from its fattening effect—stock having access to it improve materially during the time it is in season. The pods can be stored for use in winter. Such a fodder bearing tree would be a great boon to the drier portions of our State.

THE VANILLA PLANT.

We find in the *Popular Science Monthly* an article on the Vanilla, from which we take some items.

The vanilla is an orchid, native of Mexico and other countries around the Gulf of Mexico, also in Brazil and Peru. It is cultivated solely for the fruit, as the flower has no beauty. There are a number of varieties, the *Vanilla planifolia* being the one which possesses the strongest perfume. It had been long introduced into Europe, but the flowers are not handsome, and as it did not fructify the culture was not extended, until the discovery was made that it was necessary to fertilize the blossoms artificially. A number of persons seem to have found this out at nearly the same time, but the one whose discovery resulted in practical benefit, was a young slave, Edmond Albius, in the service of M. Ferréol Beaumont Bellier, of Réunion Island. Albius had seen his master produce hybrids by cross-fertilization, attempted some experiments himself, and observed that on touching the flowers of the vanilla with the spine of a palm, two little yellow bodies contained within changed position, and the result was that fruit was formed. The result of this observation was that vanilla beans were produced in such abundance as to become an article of commerce from the Island. It is said that an experienced man can fertilize as many as a thousand flowers in a morn-

ing. The flowers last but one day, and fertilization must take place in the morning. It would seem that in some places there must be an insect that visits the plants, as in Mexico and other points around the Gulf it fruits naturally. A very singular fact mentioned by M. Poisson in this article is that the stigmas appear to attract the pollen from a considerable distance.

The vanilla is a climbing plant, and reaches the top of tall trees. It has a pulpy stem, and aerial roots, whitish or yellowish flowers, leaves arranged in two rows. The plants are multiplied by cuttings. A plantation lasts about seven years. It requires a moist and warm, but sheltered, position, and will not bear frost, or strong winds.

Correspondence.

[The editor of the CALIFORNIA HORTICULTURIST cordially invites all persons interested in any branch of horticulture to send practical questions and notes of their own successes and failures. A brief, unadorned statement of events in one little garden may often prove of universal interest. Short notes from busy people, all over the Coast, will make this Department fresh and valuable.]

AQUATIC PLANTS.

EDITOR HORTICULTURIST—Dear Sir: I have a pond of water, with fish in it. It is a big pond, as artificial ponds go, being four hundred feet long, and two hundred feet across. I have it arranged so that water runs in, and runs out again, in a small but constant stream. The pond is five feet deep in the middle, shallowing, of course, to the edge, and I have had an island built up in the middle, on which there are now a few trees and weeds. The whole pond is belted with trees which make it very sheltered. At present the surface of the water is covered with a fresh-water weed, which I have raked out several times, but it grows again. Friends have told me that there are plants which

naturally grow in water, and would add much to the beauty of the pond. Could you, or any of your readers, assist my choice, or give me any information on the subject? "W."

[The above letter opens up a new field. Will our readers and correspondents please examine the subject, and help us out? At this season of the year, when our hills are so brown and homely, and, even over the valleys, the most which one sees are stubble fields and dry pastures, except, indeed, where there are orchards and gardens, the mere thought and suggestion of a water-garden is refreshing. What shall we plant to make the water bring forth shapes of perennial beauty? "Lilies," says one. Ah! but there is much else besides lilies. *Thalia dealbata* is a water plant from the Southern States, and would be hardy here. It grows four or five feet high, with large ovate leaves, on long stems, and fine panicles of purple flowers, lifted above the leaves. We would recommend a clump of this as highly desirable. The well known *Calla lily* (*Richardia Africana*) deserves a place, say at one end of the island. Another desirable plant is the *Sagittaria sagitifolia*, or Arrowhead. It has large white flowers, sometimes blotched with pink, and always showing a yellow centre (stamens). It would be worth cultivation for the beauty of the leaves alone. There are many species of *Sagittaria*, most of which have large, fleshy roots (rhizomes) used for food in many parts of the world. One species grows wild in this State, and the tubers are collected by the Chinese for food. Occasionally plants are found with double flowers. The *Pontederias* are handsome plants, which deserve a place in the aquatic garden. *P. cordata*, is the "Pickerel weed" of the Eastern States. *Caltha palustris* has bright yellow flow-

ers, shaped like a Calla lily. *Cyperus alternifolia*, and a large list of aquatic grasses, reeds, etc., are of value in grouping. Different kinds of *Iris* may be planted near the borders. Indeed, a little study will convince one that the trouble with aquatic plants is not how to find enough that will do, but how to choose rightly from so many. We consider the planting of the borders of the pond, and the island in the middle, the most important part of all. Half-aquatic plants, weeping trees, swamp Cypress, shrubs which like to be near water, vines, those showy garden plants which enjoy much moisture—all these may be grouped so as to hide the art and seem nature's own self. Above all, do not be afraid of using our own wild plants, if they are only handsome in themselves. Clumps of our scarlet *Mimulus*, our *Sagittaria*, our Cat-tail flag (*Typha angustifolia*), may be used with striking effect.—EDITOR.]

LETTER FROM INDIANA.—EDITOR HORTICULTURIST:—I receive your valuable magazine regularly, and never lay it aside until I have finished it. I am much pleased to see your attention and energies are devoted mainly to California, for the HORTICULTURIST will never fail to be good and desired by all, especially those living beyond the limits of your State, when devoted to the noble work of disseminating knowledge of that wonderful country, California. Hope you will succeed in organizing a State Horticultural Society for California. By the way, can not you lay by some figures of the crops of 1879, and as a summary of a year's work give us a series of tables of fruit statistics for the December number? Nothing fills *my eye* like figures of crops of fruit or grain, and I often think everybody else must or ought to share with me the reverence I

have for them. You know we all have hobbies, and I *guess* this is mine. You have such a vast field to write from, and such a great variety of subjects to select from, perhaps you will think it a most arduous undertaking.

Again thanking you for your kindness, I remain

Yours truly, L. B. CASE.

CONCERNING SCIENTIFIC TERMS.

EDITOR HORTICULTURIST—Dear Sir: I am gratified but not satisfied with Mr. Rivers' views on the *Orgyia* Moth. Mr. R. has got the Greek and Latin of that moth "down to a whole," as we say in "the mines," but as I resemble William Shakespeare in one of his finest failings, I do not fully enjoy the high learning. Do not mistake me if you guess that I want to elevate Shakespeare at my own expense. Nothing of the kind. It is simply this: Shakespeare "knows little Latin and less Greek." So do I. Therefore the words "*Orgyia*" and "*Lipariidæ*," when uttered to my rural and rustic ears, in regard to a caterpillar or a straddle-bug, fall like strains of a solemn psalm sung to a horse that is dead—as our own poet Longfellow would express it if his facile and felicitous art were brought to bear upon it.

But when you come to an easy word like "*Bombycoides*" I feel more at home. The other words are Greek. Now mind I do not say they would be Greek in ancient Greece, because I have a notion that if I now lived in Greece, and had a field of potatoes on the sand lots of Athens, and Professor Schliemann were to come along there, where I was plowing with two steers yoked by the horns to an oak limb, and ask me if I had seen any *Lipariidæ* around there, I should say to him, in the language of the Athens of America,

'Oh, yeou git aeout." But Bombycoides—that's a different thing. All us fellows in Pajaro Valley know what that means. I met my Hibernian neighbor, and I axed him could he tell me the meaning of Bombycoides, and he, looking wildly at me, readily answered "na-backlish." Which being highly satisfactory to me as no doubt the reading of it will be to orchard men generally, I quickly replied "*bedtha-huist*." As these italicised words are pure colloquial Greek, I am not sure that I have given them a clear philological rendering; but practically they are correct. Learning is abundant in this valley. It lies around loose like sea sand in San Francisco. Here have been educated Secretaries of State, Supreme Judges, candidates for Governor, great Railroad Lawyers, etc., and the learning is not yet exhausted, as can be plainly seen by this present writing. We have common schools on the land and schools of whales in the bay, which booms its monster music in the discord of the tides. And they are all "whaling" schools. To which the recalcitrant boy, gazing ruefully upon the palm of his red right hand, responds "you bet."

Now you, Mr. Editor, and no doubt your readers, by this time, would like to ask what all this has to do with the Orgyia Moth. Don't you do it. It is not in order. For if I do not show my learning no one will believe I know much about moths. But I do, though.

Now, to come to the point, Bombycoides comes from the Latin "*bombyx*" or "*bombax*," and means silk or cotton—hence "*Bombycoides*" is a word which refers to silk worms. Silk worms are caterpillars. So we come out at the same hole we went in at—argal, a caterpillar is a caterpillar. But "*bombast*" also comes from the Latin "*bombax*"—therefore if there is any bombast con-

nected with and growing out of this caterpillaring it is linguistically derived from the Latin root of the subject.

Having now exploited (that's a noble word) our learning, we come down to business. The tufted caterpillar, *nee* Bombycoida, is a fancy colored robber, about an inch and a half long; not very hairy; is marked with red, yellow, and ashen oblong squares along the sides; ash-colored belly and variegated back; three to five little tufts of dust-colored hairs, like miniature house-painters' brushes, on the middle of his back, (I was about to say spine, but, perhaps, he is not vertebrated); has two jet black slight hair pencils on one end of his back and one ditto on the other end. The moth *does not* plaster its eggs on the trees or elsewhere, but lays them in gray balls on the under side of the tree limbs, notably near to where the limbs join into each other or into the tree trunk; but will lay its eggs in emergency anywhere it happens to be when the eggging impulse comes on. The caterpillar does not curl up when touched; can not be easily shaken off the trees, but will hang on with all the "final perseverance" of a hard-shelled Baptist bound for the Kingdom of "the sweet by-and-by." Eats the young fruit as fast as it forms by first eating the skin off the shady side, then by continuing to eat on that side till the core is reached; after which it attacks the shady side of another unit of fruit, and so on, until it wishes to spin its cocoon, at which time it eats all the young, tender leaves, and just riddles the older ones. If the fruit dies not from these wounds, it grows and matures scarred with russet scars and twisted on one side.

This description ought to enable any dirt worker in the State to know the beast when he sees him.

It is the hardest caterpillar to abate I ever saw. In 1878 I kept from one to three Chinamen employed for a week on six acres of apple trees—large trees—crushing cocoons and eggs, but in 1879 I have about five times more of these pests than in 1878. It would take a regiment of Mr. Charles Darwin's most remote ancestors to "coon" up and down the various branches and trunks in a large orchard sufficiently to arrest this crawling evil. This pest may be local, or it may fall before its natural foes, but if not, then I wish to say, and to say as solemnly as possible, to the orchard men of California: "look out." Yours pomologically,

J. W. GALLY.

P. S. The above description of the caterpillar is from memory, but is practically exact.

[Dr. Gally, in a private letter, explains the meaning of his Gaelic. The Dr.'s letters, we state in strict confidence, are usually a little more Gallyesque (to coin an absolutely necessary word) than anything he ventures to print.

"The word 'na-backlish,' (says the Dr.), is Gaelic for 'cheese it, pard,' or 'be careful what you say;' while 'bedtha-huist' means to say 'shut up,' or 'hold your jaw.'"

By referring to the first few paragraphs of this unique and amusing letter, our readers will be able to realize how spicy a dialogue this literary horticulturist must have had with his Celtic neighbor.

The observations embodied in this letter, however humorously couched, are serious enough to deserve a careful second reading, and a thoughtful consideration. Who of our readers have observed the work of this destructive caterpillar in their orchards? Who, not having observed, will please look, at

once, and hereafter keep good watch for the first traces thereof? It is a small pest considered singly, but such things may ruin individuals, prostrate industries, and mar the prosperity of nations. Witness the cotton worm, the potato beetle, the codling moth, the phylloxera, the locust scourges of history.—
EDITOR.]

WINTER BOUQUETS, ETC.

MR. EDITOR:—I have learned one or two things this summer that might possibly be of use to some one else, therefore I note them down for you.

One is in regard to drying grasses for winter bouquets. I have always been in the habit of tying them up and hanging them away in a dark place till wanted. This preserved their color, but when arranged there was a want of grace about them, that so contrasted with the appearance of the same grasses when growing as to make them very disappointing. This summer I put them, when first gathered, in a vase, and set them away in a dark closet to dry. The result is very pleasing. They droop and bend gracefully as grasses should. I have also been learning something in regard to cut flowers. There is a most surprising difference in the value of flowers for vases. Heliotrope, lovely as it is, had better be omitted in making up vases of flowers that you wish to keep very long, unless it has been grown in a greenhouse. Pelargoniums, if gathered just as they are opening, or even in the bud, are valuable, as every bud will open. Nasturtians, too, will continue to open buds and keep the vases pretty for many days. Whitlavia will do the same, but each bud that opens will be lighter until at last they are almost white. Lilies will keep several days, and the unopened buds will expand. Perhaps there is no more useful flower

for the vases during the latter part of summer than the Coreopsis. There are several colors, yellow, dark red, and those that blend these colors. Roses, if picked when in bud, keep a long time. Sweet peas, if plucked early in the morning, keep pretty well. Balsams, only a day; Fuchsias, but a short time. The flowers of the Agapanthus keep a long time, and are lovely with pale pink Begonias, or Pelargoniums. Hollyhocks are remarkable for the length of time they remain perfect. When one has five or six vases to take care of, and many other things to do, it is very desirable to know what flowers will keep those vases bright and pretty the longest.

L., Niles.

IS THERE A FRAGRANT HYDRANGEA?—
EDITOR HORTICULTURIST: I have been told that the florists of San Francisco offer for sale a Hydrangea with fragrant blossoms. I have four different varieties of Hydrangea, and none of them have any fragrance. I would like much to know if there is any such variety; what is its specific name?

Yours truly, C. W.

LOS ANGELES, Cal.

ABOUT FRUIT DRIERS.

EDITOR HORTICULTURIST—Dear Sir: I wish you could give us a letter, or some editorial notes, on "Fruit Driers." I suppose it is a delicate subject, and liable to bring abuse on your devoted head, for I notice the men who patent or own fruit drying machines are peculiarly sensitive to criticism. But isn't it your duty, and my duty, to say something? Should we not praise merit, and condemn whatever is cumbrous or unworthy?

It is claimed by the agents of rival driers, that their own particular machine is best, while all the rest are

frauds. It is claimed by each, that the future of our State rests largely on the adoption of his machine, that the canneries will be forced to give up, dried fruit (by that particular process) being cheaper and better. Of course the figures of profits are very enticing, and the whole thing is *couleur de rose*.

Now, is it an undoubted fact that the market for our dried fruits is so extensive? Is it true that we have only to produce a good quality to control the markets of the world? Are the tests which are applied to these driers, which win medals and diplomas, of such a practical character as to make it certain that they are fit for daily use by plain old farmers? Is each drier, when the tests are made, filled full of fruit, just as it would be in actual practice, or are only a few pieces put in and dried, at a great advantage, for mere exhibition? And how many pounds of apples, pears, peaches, plums, respectively, or of any given kind of vegetable, will one cord of seasoned live-oak wood dry, fit for market? On this last point I want to see tables as long as my arm.

I have stood by the driers which have been in operation at the Mechanics' Fairs, at the State Fairs, and elsewhere. I have visited one or two Alden and other factories, and I feel interested in the subject. But I find that by covering my scaffolds with netting to keep insects off, and by care in the process, I can produce as good sun-dried fruit as the average of the machine-dried fruit. At least it seems so to me, though I suppose I shall be visited with the anathemas of the fruit-drier fraternity for that statement. However, I will venture their wrath, for, if they reply, they may give me some statistics—first, as to the market; second, as to the cost of producing a pound of fruit.

If I knew of the really best drier I

should possibly try one for family use myself, and some of my neighbors might. But don't, for sweet pity's sake, print my name at the bottom of this letter, or else before the week is out, I shall have at least six fruit-drier agents sitting on my board fence, with bland smiles for me, and internal hatred for each other. And each one of them will have a case of the most charming specimens, arranged in little squares, and in fancy shapes! And I shall be completely overwhelmed! Yours truly,

FARMER, Alameda County.

BRIEFS OF CORRESPONDENCE.

Cacti, in pockets of rock-work, are now in full bloom.

It is Chrysanthemum season, and still the lilies and roses are yet with us.

A correspondent has tried Cooke's Box Fastener, and thinks it of value for orchardists.

The Lime hedges of Pasadena are reported as very beautiful. They withstood last winter's severe frosts.

The idea of planting trees on Goat Island finds favor in some quarters. Now start a subscription, somebody.

This heading is for lines and paragraphs gleaned from our correspondence, but too short for separate titles.

Mr. Blowers reports his raisin crop as the finest he has ever had. But he found time to attend the preliminary meeting of the State Horticultural Society.

Leonard Coates, of Yountville, desires further notes on the varieties of prunes. He is, and very rightly, of the opinion that considerable confusion exists in their nomenclature. The subject shall receive early attention.

A lady of Alameda County has a rare *Amaryllis* now in bloom. She states that the original plant was in the old "Priest's Garden," at the Mission San Jose, and had been there for many years. The flower is large, pure white, and beautifully fringed.

Inquiry still continues respecting the Olive. Frank Kimball, of National Ranch, San Diego, has made the best pickles; Elwood Cooper, of Santa Barbara, has produced unsurpassed oil. Numbers of nurserymen will be found without a stock of trees when the rush comes.

This is the season, so some one writes, in which to sow the seed of biennials and perennials. And, we add, it is, near the bay at least, the month in which Pansies begin to bloom more abundantly in the cool atmosphere. Pansy beds may easily be kept handsome from now till May.

Mrs. Ames, of Auburn, well known as an accomplished lady botanist, and correspondent of the Torrey Club, sends us an article on Tea Culture which, along with others of much merit from other persons, is crowded out this month. We are promised regular articles from Mrs. Ames.

In July last, Mrs. Austin, of Big Meadows, Plumas County, made the ascent of Lassen Peak. She is the first lady botanist who has ever climbed that picturesque mountain, whose twin peaks are such a landmark over the whole upper Sacramento region. We wish we had letters on the botanical results of her trip.

Several letters remain unanswered until our next. We close with a request that you will continue to pelt us with postals.

Editorial Department.

THE STATE HORTICULTURAL SOCIETY

The preliminary meeting of this promising institution was held at the hall of the Academy of Sciences, on Wednesday afternoon, September 17th. There had previously been a "call" issued to those who were interested in the subject, and this had received a large number of signers. The time set for the first meeting was unfortunately in the midst of county and district fairs, there being no less than four such fairs in operation during that week. This prevented some of our most earnest horticulturists from attending the meeting, they being engaged in local work. All things considered, the meeting was a commendable success both in point of numbers and of enthusiasm. Mr. R. B. Blowers came down from the charming city of Woodland, leaving for once his beloved vines. Mr. Leonard Coates, a young man who has taken much interest in the development of horticulture on this coast, came down from Napa. From that valley also, Mr. John Lewellyn, one of the oldest, most reliable, and best known of the fruit growers of this coast, came to render all possible aid and comfort. Mr. Geo. West represented Stockton, and there were a number of Oakland and San Francisco gentlemen present. Mr. John Lewellyn was made Chairman, and Mr. Charles H. Shinn, Secretary.

Business was taken hold of rapidly. The first question asked was: Do we think the time has now come to organize, with reasonable prospects of success, a permanent State Horticultural Society? This was answered affirmatively by a unanimous vote. It being thus decided to proceed boldly, and take possession of the field, a committee

of five persons was elected to draft a constitution and by-laws, and to fix a place and time for the next meeting. The members of this committee were as follows, named in the order of their selection: G. P. Rixford, of the *Evening Bulletin*; Charles H. Shinn, of the *HORTICULTURIST*; Edw. Wickson, of the *Rural Press*; E. Walleb, of Fruit Vale; John Lewellyn, fruit grower of Napa Valley.

The meeting entered upon an informal discussion of many points involved. It seemed to be the unanimous desire to have the new Society conducted on as strict principles of economy as possible from the very start, there being a strong desire to build up safely and legitimately, drawing to our ranks persons interested in horticulture for its own sake. It was also thought desirable to procure, if possible, the old record books and papers of the departed horticultural societies which have formerly flourished in this city, so as to study their methods, copy their points of excellence, and try to avoid their mistakes. Several speakers dwelt at length upon the need and usefulness of a properly conducted society; upon the possibilities of holding a horticultural exhibition at no very distant day, and on the nature of the scientific and practical work which would naturally fall within our province. Other speakers, remembering, perhaps, the private history of some other societies, pointed out the need of hearty union and co-operation from the very first.

The Secretary read a long and interesting letter from Thomas A. Garey, of Los Angeles, who regretted his unavoidable absence, but desired to express his views regarding the field and future for a State Horticultural Society. He brought out most clearly the fact that there need be no possible discord or ill

will between the State Agricultural Society and the State Horticultural Society; that each has its own work, and may, and should, be heartily proud of the other's success.

After adjournment the chairman called the attention of the members to some seedling almonds he had brought with him. A discussion on their merit followed, but a full report was delayed till next meeting. The committee on constitution, etc., determined to meet on the following Saturday to discuss measures, and issue a circular to the horticulturists of the State, fixing a date for the first regular meeting of the State Horticultural Society. The persons present then, after many hearty hand-shakes and congratulations, dispersed in different directions, and the incipient organization of what we hope will prove an abiding institution was accomplished.

THE NEXT MEETING OF THE STATE HORTICULTURAL SOCIETY.

The Committee of five, elected by those present at the preliminary meeting of September 17th, held a meeting on the afternoon of September 20th, in the editorial rooms of the *Rural Press*. A circular was drawn up and ordered printed. The date of the next meeting was fixed on Saturday afternoon, October 25th, at two o'clock. The place will be at the rooms of the Academy of Science, corner of California and Dupont Streets. A full attendance is desired, as a Constitution and By-laws are to be adopted, and officers elected under them. The Committee adjourned to meet again on the following Saturday, Sept. 27th, and complete the constitution.

OUR ILLUSTRATIONS. — It has always been difficult to procure suitable and satisfactory illustrations for this month-

ly. Engraving and coloring are much more costly on this coast than elsewhere, and we have not felt able to go to any great expense in the matter. Satisfactory as the prospects of the *HORTICULTURIST* appear, we have not heretofore felt able to announce any decided change in the system of illustrations. The most perfect thing, it seems to us, would be to give pictures of our own woods and rocks, of our own plants and trees. Holding steadily this ideal, as something for the future, we shall after this month give plates less often, but strive to have them better, and more distinctively Californian. We believe that every one of our readers would very much prefer to have a costlier illustration, though at greater intervals. The *Gardener's Monthly* gives, once a year, a very choice plate. We shall try to have a picture oftener than that, and there will be one of a different character next month.

CALIFORNIA SCHOOL GARDENS.

There is a class of earnest and faithful toilers of whom the noisy world hears little, and yet whose labor is of infinite and endless value, of increasing dignity, and of measureless significance, being, year by year, linked more and more closely with the true causes of progress, and the hoped-for, hidden possibilities of humanity. Because teaching, in its best type, is so much a primal need; because teachers, of all persons, should be kind, wise, glad, fearless, having the deep strength, as of the hills, the largeness, as of the open sky—unshaken faith in ultimate justice, unquestioned purity of speech and life; because, in short, the exactions of this calling are so many, there is need of every possible help and suggestion to link all educational institutions together in harmonious action. One of these

helps and steps towards a scientific method will doubtless be found in a well managed "school garden."

No one, except a teacher in a country district, fully understands the difficulty in persuading the people of the neighborhood to improve the school-grounds, or, we might as well admit frankly, to persuade them to adopt any new idea whatever. Young, hopeful, ambitious school teachers are apt to attempt so many things, which encounter only apathy and stolid indifference, that they settle back into a very dangerous neglect of the new thoughts of the profession. It is possible, and altogether desirable, that the youngest school teacher in our State shall feel at one with the whole cause of education, and with workers of every land, in every department of knowledge, and in every field of suggestion.

The thought of a school garden is to train the moral faculties of children by giving them flowers and plants to pet and love; to develop their physical health by exercise in the light outdoor labors of the garden; to introduce, test, experiment with, and teach about the important textile, economic, and medicinal plants; to study and compare destructive and beneficial insects, and, in short, to make a practical, daily use of plants, soil, seeds and skill, to teach endlessly about the earth and its productions. Of course it is botany, entomology, horticulture, and a multitude of other things all scientifically developed, and taught, not, as so often, empirically, but as a part of a beautiful and complete system.

This is a time in which the methods and results of our present school system are sharply criticised, sometimes justly, but far too often with blind ignorance or stupid prejudice. The weightiest problem of to-day is how to make the

school room more and more a means of broadening the culture of the people, of quickening their moral sense, of making clean, healthy, gentle, honorable men and women. In considering this problem we must justly estimate the value of instruction in *natural science*. Rossmüssler says: "Mother earth, with her materials, powers, phenomena, and forms of life, is to us what we call *nature*. This nature is our home, to be a stranger to which brings disgrace and injury to us all. In this conception, nature is the groundwork of human culture and morals. In these words, in my view, lies the central point of human instruction." Pregnant sentences these, worth a deep consideration, thou earnest teacher.

If we truly desire to give children living facts of the natural sciences, we must make nature our friend and an open book for daily counsel. Dry husks of formulas, and foolish dust of books, half understood, wholly unverified by outdoor knowledge—these are a curse to children and to teacher. No book on botany ever did or ever can take the place of outdoor observation; no picture of a flower is worth the dried specimen; no dried specimen is worth the living plant, and, in developing the higher possibilities of teaching, the school garden must play an important part. Schwab, in his delightful manual of the School Garden, says that "It serves, in the first place, for the cultivation of useful plants of all kinds—cereals, and economic plants; fodder plants, leguminous plants, and the different commercial plants: secondly, for showing the progress in husbandry, and for diffusing the knowledge of physics and chemistry."

Teachers who would like to know more about the German plan of a school garden ought to send for the work, no-

ticed in our review department, and then try to adapt its suggestions to their own needs. We must not wait for government aid. The State Superintendent, and the superintendent of each county, the principals of training and normal schools, and the teachers of kindergartens ought to take the first steps in the matter. In almost any country district, where water and a piece of good soil can be procured, an earnest and practical teacher can succeed in awakening an interest in a school garden. In the climate of California the work for a prosperous garden must be commenced early in the fall. The plot of ground must be chosen, and plowed deeply, harrowed, cross plowed, and harrowed again, so as to lie fallow for some time. Correspondence must at once be commenced with such persons as are able and willing to contribute seeds, plants, or needed information. A clear plan must be developed. We feel sure that the interest awakened will not prove ephemeral, but will brighten and increase, year after year.

In this State we need to teach children about our own most beautiful native plants—the *Nemophilas*, *Gillias*, *Leptosiphons*, *Mimuluses*, *Lupines*, *Godetias*, and other brilliant flowers; the *Brodeas*, *Calochortuses*, *Liliums*, and other bulbs; the mountain shrubs, and trees, together with their uses and relationships. The trees may be started from seed, by the children's own care, and so aid to illustrate the growth of plant life, after which they may be planted by the roadside, or at home. The valuable families of the *Eucalypti* and *Acacias* may be studied thus; and the *Citrus* family, embracing the *Orange*, *Lemon*, *Lime*, and *Citron*, destined to form in future a large part of the wealth of our State, will call for much attention. The varieties, uses,

and culture of the *Grape* deserve equal study in this State. Forage plants, adapted to a dry climate, ought to be tested; also those plants which might be profitable if introduced into general culture, and which would serve to vary our too universal wheat system. With our long bright summers, and the range of plants greater here than elsewhere, it does seem as if school gardens ought to reach a beautiful development on this coast, where kindergartens have already made so good a beginning.

AUTUMN BULB-WORK.

It is time to be up and doing, in these October days. We must have no lack of spring bulbs through neglect now. Already the autumnal catalogues are at hand; the seedsmen and florists display their fascinating piles of bulbs in the windows. Come, let us take counsel together. What is it we shall best choose to plant, and how shall it be done?

Of course the garden has been kept neat, annuals gone to seed have been cleared out, weeds decapitated, overgrown plants trimmed within bounds, and, in brief, a watchful, daily care manifested. This adds much to the feeling of zest with which one now begins the consideration of bulbs.

Our climate is indescribably perfect for most of the early spring bulbs. Some of them seem to deteriorate and disappear in a few years, but that is mainly caused by faulty methods of cultivation, or from over-blooming, and consequent exhaustion. Bulbs like a light, mellow soil, enriched, if at all, with thoroughly decayed cow manure. Foreign bulb-books abound in minuted directions, few of which have ever been of much benefit, so far as we can learn, to any bulb growers on this coast. It is best to choose, when you purchase, medium

sized, firm bulbs in all cases, making sure that they have not been injured by heat, cold, or moisture while on the journey from New York, or Holland. It is best to purchase early, so as to have a larger stock to choose from. Lastly, very early planting is one of the essentials to complete success. We must, wherever possible, imitate the condition of our own native bulbs, which lie dormant in the ground, ready to spring forth after the first rains. If bulbs can be planted when the ground will not receive a drop of moisture after they are done blooming, and where gophers will not destroy them, they need only be taken up once in three or four years. If it is desired to fill the same space with later blooming annuals, so as to avoid the empty appearance, the bulbs must, of course, be lifted each year, and kept safe from destructive rodents.

The necessary work of a garden becomes, on this coast, overwhelming after the rains fairly begin, for then the weeds start, and there are flower beds to be made over, plants to be moved, and the multitudinous plans, which have lain dormant all summer, spring at once into fullest life. Whatever, therefore, relieves the work of earlier spring in our valley gardens of Central and Southern California, deserves the telling, and merits a welcome. And, in our own experience (at Niles, Alameda County), we have found the most satisfactory bulb gardens were those the earliest made. Our best blooming, most luxuriant spring bulbs are those planted in light, rich soil, during October and November, and left, still sleeping, to be awakened by the warm, gentle rains of December. If planted rightly, with a garden trowel, and the surface of the bed covered with a sprinkling of clean white sand for the sake of appearances, it will be eminently sug-

gestive of good gardening, and a vast relief to the mind. When one has a good many bulbs, it is very proper to keep a part for later planting, February or March being a good time.

The bulbs of chiefest value for this early autumnal planting, appear to be the Crocus, Anemone, Oxalis, Scilla, Ranunculus, Tulip, and Narcissus, of each of which there is a great variety obtainable. The Hyacinth appears to thrive best with somewhat later planting, in December near San Francisco. The Crocuses and Tulips do not thrive quite as well, in our valleys at least, as could be desired. They do better in some of the mountain counties. The brilliant Anemones and Ranunculuses, both double and single, and of every possible shade and color, should take high rank in the California garden. They have given us eminent satisfaction for many years, and multiply exceedingly. It is a great pleasure, also, to grow them from seed, and notice the variations made. The Turkish Ranunculus is particularly hardy; the Persian species needs a warmer soil, and is more impatient of too much moisture.

OUR SUCCESS.

Nine months ago we took charge of the CALIFORNIA HORTICULTURIST. There did not seem to be much money or much honor in the position. It simply meant the giving up of so much time, which might otherwise be spent in study, and in more remunerative work. But the task appeared so important—so closely linked with the growth and development of the State, that we decided to take hold, and give it a fair trial.

To-day, though our first year is not completed, we are enabled to speak of success, of enlarged subscription lists, increasing advertisements, more earnest contributors, and cheering words

from men of world-wide reputation, whose praise is no light task to win, and no small guerdon to receive. From the office of the *London Garden*, that famous and authoritative horticultural weekly, whose issues are each as large as a monthly, there comes a letter, written by Wm. Robinson, the editor and proprietor, who praises the *HORTICULTURIST* in high terms, wishes us unlimited success, and feels sure that we will continue more and more to deserve it. Apropos of this subject, we observe that the *Garden*, the *Gardener's Chronicle*, the *Horticultural Record*, *Gardening*, and other English journals quote from every number of our monthly. Our notes on gardens, fruits, orchards, etc., go the rounds, and extracts from leading articles are often made. Dr. Anderson's "Ferns" was thus copied; Dr. Thos. Bennett's letter on "Pruning" we also noticed in several places. Now this sort of thing proves that we have a field to occupy, and that we are filling it as fast as possible.

Dr. Thurber, the veteran editor of the *American Agriculturist*, writes us an enthusiastic letter, which makes us feel as if we had known him for a long series of ages. The *Agriculturist* for July gave our monthly the most complete sort of a notice, which dropped letters down upon us from out-of-the-way places of the whole round world. Then Thos. Meehan, of the *Gardener's Monthly*, sent a letter which was like a hearty hand-clasp from a friend, so plain, kindly, and encouraging it was. From Australia, Baron Von Mueller, the indefatigable Government botanist of Melbourne, is interested in our work. Botanists, nurserymen, and horticulturists of repute on this coast, at the East, and in Europe, have given us the most cordial welcome.

Now, there is in all this nothing per-

sonal. It is not for "my" sake that you, widely scattered friends, wrote thus. It is not for your sake that I speak of this now. But it is because there was a work to be done here, and in this way, and it was right that I should take it up with much hope, and deathless desire. It is because we feel that there is no rivalry between us except a noble emulation. We will go on by day and by year, trying to do our tiny best, trying to make this a lovelier and purer world, trying to gladden the hearts of children, and to remember the singing of birds—trying to increase the flowers, and lessen the weeds. When we buckle down to our work in the narrowest of city offices we will think outdoor thoughts and breathe the air of the forests which cling to the rugged peaks. Lastly, let us, without any doubt or shadow of turning, have faith in America, in the royal Saxon race, and in ultimate humanity.

THE TREE BROKERS.

It is now the season in which the elegantly attired tree brokers are most numerous and most persistent. Be it understood, by the much suffering public, that a tree broker is a person who buys trees and plants exactly where he can get them cheapest, and of course can give no effectual guarantee as to their reliability. With the present pressure on the nursery business, there are now, to a greater extent than usual, a number of tree and plant growers who have no particular pride in their occupation, and very slight standing among their fellows. Their chief aim being to sell trees without any regard to the quality, the tree brokers are enabled to buy from them (without guarantee) at possibly one-half of the regular rates of a reputable nurseryman. Perhaps good stock is sometimes got from these brok-

ers, but the chances are all against it. We could mention a number of cases in which men had been cheated into buying trees, claimed to be of some vastly superior variety, which proved afterwards to be extremely common, though costing an extravagant price. One friend of ours bought a dozen apple trees for new sorts, and found when they came into bearing that they were the meanest kind of seedlings. Another person paid for plants of six new varieties of strawberries, and received all of the same, and that Peabody's seedling, a long-known sort. A third writes us that he had the pleasure of paying one dollar apiece for roses which the nurserymen sold at fifty cents, and that "the Utah Hybrid Cherry is a pitiable fraud." We might fill pages with such facts.

Now, we do not believe in plate-books and jars in traveling agents, or in that way of doing business. It seems to us that if a man wishes to plant out an orchard, the best and safest way for him to do is to go to the nearest nursery and examine the stock for himself. He may also write for catalogues to other places, and compare them carefully. When he decides where he will purchase, if he will put himself into direct communication with the head of the firm he selects, he will have a reasonable guarantee of redress, should the trees prove untrue to label. It seems to us that the planting of even a small orchard is of sufficient importance to a man to justify this course. We think that he must be either very ignorant or very foolish to require a middle man in the matter. We have known wealthy men who gave the whole order for grounds about their new houses to perfect strangers—tree brokers, who had bought their stock at a dozen different places. But we never heard of any truly satisfied purchaser.

There is this to be said, lest our meaning be misinterpreted. Reputable nurserymen often have local agents in other sections of the country, appoint them regularly, hold themselves responsible for their agents' acts, and so sell more trees and the better accommodate their customers. Of course this is entirely legitimate. If a trustworthy citizen of any community wishes to sell trees and plants, and makes arrangements to that effect with some reliable firm, the matter is under the inspection of intending purchasers. We have known a number of cases in which a person who took such a local agency, began experiments of his own, learned the business slowly, and at last built up a successful local nursery, purchasing only what he could not advantageously grow.

But this, in conclusion, we do say: that whoever buys trees or plants from an unknown agent is liable to rue his bargain, and almost deserves to be cheated. It is contrary to the principles of business to buy on such an uncertainty. When a dapper, bland, and voluble man of the style known as gent seeks to persuade and inveigle you by means of plate-books and fruit jars, calmly consider the chances, and then—don't invest. Tell him you read the *HORTICULTURIST*, and you desire, if your trees are unsatisfactory, to be able to find the man who grew them.

A ROSE SLUG REMEDY.—A postal card just received from a little town in the redwoods, says: "If you have not yet tried powdered White Elebore for the rose slug, please do so. It has proved effectual with me. I dust it over the leaves. I presume it might be too expensive to use on a large scale, but should always use it for a small garden or for a few house plants."

Editorial Notes.

ROSES ON THEIR OWN ROOTS.—The *Gardener's Magazine*, of London, says that there are three ways of growing roses on their own roots. One is to use the Manetti stock, bud very low, near the collar, and plant the roses, after one year's growth, a little deeper than they were in the budding beds. The tops will then form roots below the Manetti stock, which will, in process of time, die away, leaving roses on their own roots. Truly an ingenious arrangement.

The second way is to strike cuttings from young wood when they have become a little firm, but before they have hardened into real wood. When you take off a branch to get a few buds the top of it will make a good cutting. Use a mixture half sand and half leaf mould.

But the most interesting way is to use buds instead of cuttings. Take a shoot, such as would be chosen as a scion, for budding. Have shallow pans of turfy peat, with one inch of sand at the top. Cut off the buds, letting the wood in the centre remain, and also the leaf. Plant each of these shield-like buds, leaf up, bark covered; sprinkle a little. Put the bell-glass over them and few will fail. Buds treated this way make beautiful plants, and can be grown to any shape and size of which the variety is capable.

TREES ON GOAT ISLAND AND ELSEWHERE.—We see that a writer in the *Bulletin* desires to have steps taken to plant trees over this beautiful and rocky island whose picturesque outline adds so much to the charm of San Francisco Bay. It is an admirable suggestion, which we heartily second, and will gladly aid by all the means in our power. But we should like to have some practical horticulturist visit the island and spend sufficient time upon it to be able to make a careful report on the prospects of making trees grow there in any quantity, and also as to what species would be most desirable. We speak for a few trees of *Pinus Massoniana*, also for *P. Verticillata*, and for *Cedrus Libani*. We do object to a mere monotonous covering of the rocky outlines with *Eucalyptus* only, but of course a due proportion of the *Eucalyptus* would be desirable.

Indeed, we see no reason why the proposition which is so admirable with reference to Goat Island might not be extended to the other barren and rocky islands in our bay—Angel, for instance. Nor can we except the treeless hills adjacent to the shores of San Francisco, San Pablo, and Suisun bays—the Coyote hills in Alameda County, the San Pablo, and the Martinez hills in Contra Costa, the Potrero, and the Montezuma hills in Solano. With reference to islands and points under government control, it is the duty of the government to see that they are properly planted. It is the duty of enterprising citizens to so earnestly represent the advantages of tree planting on these islands as to arouse the gov-

ernment officials to immediate action. There ought to be a small appropriation for the purpose this winter, and some beginnings of planting might well be made before the close of the approaching rainy season.

LILIES AND PANSIES.—In small gardens the all-important question is how to save space, and obtain the greatest enjoyment from every inch of the surface. While enjoying our beds of Japan Lilies this summer, it has occurred to us that since some of them, particularly the Auratums, do not like over much sun, and all of them hate too frequent removals, it might be possible to scatter them among surface-rooted flowers, so as to save space, and insure an attraction for more months of the year. For this purpose we think that it would only be necessary to plant Japan Lilies rather deeply in well prepared somewhat shaded beds, and then place a sufficient number of small pansy plants on the surface to give the bed a reasonable excuse for existence. If prepared in autumn the pansies would grow and bloom through the spring and earlier summer. When the lily stalks and foliage began to fill the bed the pansies might be removed without much injury (taking the evening, and cutting back the plants), or they might even be destroyed.

THE SCARLET LOBELIA FOR AUTUMN BLOOMING.—We recently saw a very choice plant of this fine old perennial (*L. cardinalis*), which is so familiar to our Eastern friends. It was growing in a garden on Rincon Hill, San Francisco—in a narrow city garden, walled and shadowed, yet fresh and bright with the fuchsias and heliotropes, which are the pride of this wind-swept peninsula. This particular specimen stood perhaps four feet high, branching into a multitude of subdivisions, each one tipped with a scarlet spire. The leaves were unusually large, dark, and bronzy in appearance. It had bloomed year after year without any care or trouble. This *Lobelia* deserves more attention from garden folk, for hardly any other flower is so absolutely dazzling in appearance, and there are some valuable hybrids ranging in color through the shades of rose and purple. Their only drawback is that a small worm, like the strawberry grub, is quite apt to attack them at the surface of the ground, and injure them sadly.

THE PINUS MASSONIANA.—We received from Mr. Jarman, of Japan, some leaves of this pine, also of the *Pinus Massoniana variegata*. The last differs from the first only in having some leaves of a white color. Mr. Jarman says in regard to this pine: "This is one of the few pines that never grow into large trees, but throw out several stems and form an oval top. I have seen some of them as much as six feet across the top. The leaves of this pine are very fine, and the cones are small. The variegated kind are very pretty."

Gordon, in his *Pinetum* (1875), gives Siebold's *Pinus Massoniana*, with *P. Silvestris*, *P. rubra*, *P.*

Thunbergii, and *P. tabulaeformis* as synonyms. He further gives *Pinus Pinaster* (Aiton), with Lambert's *P. Massoniana*, and eight others as synonyms. Loudon, Don, and Gordon (in an earlier edition), appear to have confused the *P. Massoniana* of Siebold with *P. Pinaster*, but it appears to have a distinct specific character, as is clearly shown by Hoopes and Murray. The true *P. Massoniana* is called by the Japanese "Aka-matsu" (red pine) on account of its red timber; "Kura-matsu" (black pine) from its dark and somber look when old; and "Wo-matsu" (male pine) on account of the many clusters of male aments. The variegated species which Mr. Jarman sends is called by the Japanese "Siruga-matsu." The timber is resinous, tenacious, and durable. The tree is much cultivated in Japan, and is trained into almost every conceivable shape. Siebold visited one tree whose branches extended over a circuit of 135 paces. On the other hand, he saw a dwarf tree whose branches did not occupy more than two square inches. The Japanese graft other species of pines on this one. In England, we learn from the *Garden*, *P. Massoniana* is recommended for planting.

FLOWERS FOR THE EVENING.—We think some persons might make themselves very useful by giving us notes in regard to the effect of artificial light upon the colors of flowers. We were led to think of this by noticing the apparent change in color of a blossom of *Whitlavia*. In the garden we had been admiring its clear violet blue, but upon bringing it into a room where there was a lamp lighted we were astonished to see that it appeared to be of a sickly pinkish purple. We have always noticed that the most effective bouquets for evening were those that contained a great many white or straw-colored flowers; but we would like to have some notes as to what high colored flowers look well in the evening.

A FORTUNATE GARDEN.—Mr. Josiah Stanford, at the Warm Springs, near the Mission San Jose, in Alameda County, has been in the habit of using the surplus water from the two springs for the flowers and shrubbery. It is warm sulphur water, and highly popular both as a drink and for a bath. We doubt if any other garden in the world is so watered. The plants thrive well under this treatment. A pinery, built near the basin of the warmer spring, and heated from it, would be worth trying, for the temperature could be kept wonderfully even. The springs are situated in a sort of hollow, with a terraced hill east, and a mountain above that, while bushes, vines, and venerable willows add to the charm of the quiet spot. There was formerly a hotel here, but it is now closed to the public.

A NEW FIBRE PLANT.—Emerson's remark, that weeds are only plants whose uses have not yet been found out, is every now and then exemplified by some discovery which makes some former weed of use in the sciences or industrial arts. A Washing-

ton journal speaks of the rank weed *Abutilon avicennae*, known among the New Jersey farmers as "devil weed," and states that it yields a fibre superior to that of Indian jute, of which we import as high as \$10,000,000 worth per annum. The New Jersey Bureau of Statistics of Labor has published the announcement that extensive jute manufacturers of Philadelphia have offered to buy any quantity of the new fibre at the highest market price for jute. We hope this is all the most severe truth, but we have heard of so many new native American textiles that we confess to a slight attitude of inquiry at least for the present.

NEVADA COUNTY WILD GRASSES.—The other day a long, mysterious looking box came through the mails, addressed to the editor of the *HORTICULTURIST*. Now, a box by mail is in its way infinitely more interesting than the average letter. You wonder what sort of a new thing to be named, or gift of far off friends has found its way to you at last. This particular box when opened proved to contain a charming collection of the wild grasses of Nevada County, California, and was sent us by one of those friendly mountain folk in the region of mines and forest-covered heights, grander than any poet's song, and finer than the brightest dreams of men. We think we know some of the very ravines in which these grasses grew. There are long deepening hollows sloping toward the south, with a singing rivulet which creeps under cedar bows and fallen logs of pine, and winds past a little pointed cabin of a Portuguese hermit of doubtful character, and murmurs by a fruit tree or two, the remains of a former orchard, and helps supply a saw mill; and, joining with a larger stream, flows by a sunny cottage, and thenceforth winds over gray and glistening leagues of gravel, strewed with rotting timbers and dead upright trunks of trees, and widening at times into great bays of mines with yellow cliffs of clay and vast masses of rock. Somewhere in such a land these grasses were gathered, and they shall clasp a memory of that mountain land hereafter.

A FRUITING AKEBIA QUINATA.—We have a vine of the well known and beautiful *Akebia Quinata*, which was first planted out three years ago, having been received from Thos. Meehan, of Philadelphia. It has been a most profuse bloomer each winter and spring, scenting the whole air with its fragrant brownish-red blossoms, none of which, however, proved fertile until this year, when a cluster of a dozen blossoms set fruit, which is now nearly ripe. The fruit is greenish, oblong, much the shape of one joint of a man's thumb. We had thought the *Akebia* was diœcious, but, there being no other blooming plant on the place, this is worthy of record. The plant is large and thrifty.

NIEREMBERGIAS IN THE GARDEN.—The *Nierembergia* is a very graceful, low, bushy plant, used for

hanging baskets at times, and one of the finest flowers known, rivaling in that respect even the noted petunias. The leaves are small and delicate, and the pleasing lilac-colored cups appear in the greatest profusion. Its period of bloom is, in our climate, about all the year, and it withstands drought and hot weather better than anything else in the garden. These are all positive virtues. On the other hand, it is not fragrant, and the flowers are not of any very distinct hue, and do not seem to mingle well with other flowers in decorations or vase work. Still, we think the weight of evidence is in its favor.

A EUCALYPTUS SUMMER-HOUSE.—Two young gentlemen of our acquaintance, being lads of leisure and dormant muscle, concluded one vacation this year to build a summer-house in a certain garden where it was sadly needed. In this resolve and aspiration they were applauded and encouraged by various female relatives, sisterly, maternal, and cousinly. The place chosen was between the house and a well grown hedge of Monterey cypress some two hundred feet west, and extending north and south, thus forming a sheltered nook, already well planted with trees and shrubs. This parallelogram between the house and the hedge contains orange, lemon, algaroba, and other trees scattered over it. The particular spot selected was near a large *Paulonia imperialis* tree, which was planted five years ago, and blossomed this spring. Close by, also, is a specimen of *Librocedrus decurrens* (known as white cedar in the mountains). Toward the south shrubs and smaller trees are clustered in profusion, and a belt of eucalyptus is toward the west, beyond the cypress hedge, extending to the main road south. This close belt of eucalyptus first suggested a material for the summer-house. The belt was wide, and there were plenty of poles of all sizes to be had for the cutting, as it needed trimming out in the middle. Eucalyptus poles when dried become of a beautiful rich, reddish brown color, the green bark clinging firmly, and seldom shedding. They are comparatively light and very durable. A large rustic summer-house, with widely projecting eaves, ample doorway, and neat windows, was constructed in the course of the vacation by these two valorous young architects. Every stick in the affair is eucalyptus. Tables and chairs are to be the next achievement. Vines have been planted about it to climb up and wander over in their own sweet way till blossoms shall peep in at summer afternoon tea parties, at children reading fairy tales, at tired people watching the soft fleecy sky, and know all of the summer-house secrets, romantic or otherwise.

SACRAMENTO GARDENS.—In Sacramento, during the heated spell of this year (the heated spell is when ice becomes one's chief article of diet), there were some garden matters which seemed particularly desirable. The Public Square is, all in all, about the prettiest and best kept public square in the State,

and along the streets where the best residences are a lawn is in front of every house, and spray and rainbows mingle. Some of the semi-tropic aspects of Sacramento gardens are worth noting. They make much of *Caladium* for great clumps by the door, or in the midst of the lawn. It grows wondrously, and is clearly master of circumstances. One clump we saw stands about five feet high, and was fully twice that much in diameter. Cacti on rock work are growing in popularity. Some glorious specimens of Palms, Yuccas, Dracenas, etc., were noticed. In front of the Capitol, a stately building of which California ought to be proud, there is on the middle terrace a grand row of *Cedrus Deodari*, the oldest and finest in the State.

CALIFORNIA BANANAS.—A good deal has been said this summer of the dwarf Cavendishi Banana, and immense clusters of the fruits were on exhibition at the recent State Fair, and at several District Fairs this season. In some cases the fruit was ripe, but it was not of clear rich color, or of high flavor. This has discouraged some growers who had hoped to be able to produce an article fit for market, and of sufficiently good quality to drive imported fruits out of market. But we do not consider that the banana has yet had a fair showing on account of the severe and unusual cold of last winter. The clusters of fruit now on exhibition were formed last fall, and were exposed to the winter. It was at first thought that the plants were killed, but most of them came through all right. Still the quality of the fruit could not but have been impaired, and it will take at least another season to decide whether or not our markets are to be supplied with home-grown bananas. We sincerely hope that they may.

ABRONIAS WITHOUT WATER.—The common beach *Abronia umbellata* can not be praised too highly as an autumn bloomer without any water whatever. A circular bed is one of the brightest things in a garden, and once fairly rooted, it ought to be permanent. Long branches are useful for decoration, if used with plenty of white.

CATALONIAN JASMINE.—This, through the summer and autumn, is the best fragrant, white flowered vine we know of. Ours has made a large growth this year, and it is a mass of white sprays and clusters. It does not seem to thrive in a pot, but as soon as planted in the open air it flourishes exceedingly, and is the admired of all beholders. This Jasmine is not the sort of a vine to make a great shelter within a brief time. It is fragrant and delicate, has a cultivated, gracious air, and is altogether charming.

THE MECHANICS' FAIR FLORAL EXHIBIT.—This was a desirable display this year, and attracted considerable attention. The main premiums were taken by A. Miller & Co., Woodward's Gardens, Thomas Saywell, and H. Tasquier. I. Begg had a fine col-

lection of dried California native grasses. The Committee on Awards were: E. J. Hooper, R. J. Trumbull, and E. J. Wickson.

PLANT AN ASPARAGUS BED.—We would advise everyone who has even a small garden to have an asparagus bed. It will add very much to the housekeepers' resources. It is not necessary to do this in the old fashioned, laborious way. The bed need not be dug more than one foot in depth, and the plants can be procured very cheaply. When we add that a bed once set will yield asparagus for twenty or thirty years we think everyone will feel that it will pay to set one.

TEA CULTURE AGAIN.—And here comes the *Prairie Farmer* strongly imbued with the idea that "experiments in California have demonstrated that the soil and climate of that State are admirably adapted for the growth of the tea plant." Allow us to mournfully assert that this flattering statement is a mistake. Nothing of the kind has yet been proved here. Very few people or journals on this coast have much faith in the ultimate success of tea culture here, Commissioner Le Duc to the contrary, notwithstanding. This is not merely, or chiefly, on account of the high price of labor here, but because experiments in growing the plants have in most cases proved unsatisfactory.

PRICKLY COMFREY seems to be a little under the weather and slipping into a deserved disrepute. Its career on this coast was like that of ramie, only more so. We have a neighbor who tried it for chickens; another who offered it to his pigs; a third who tested his cows on the subject. Result—a unanimous refusal to do more than look at it. To call that which cattle will not eat a forage plant is plainly a misnomer.

TO PREVENT TREES FROM SPLITTING.—Where trees are inclined to split it is sometimes possible to prevent it by twisting two limbs together. Select two limbs that are suitably placed, and, after drawing them around the rest, weave the ends about each other, so that as they grow larger the tie is maintained.

New & Desirable Plants.

[We shall glean from our exchanges and correspondence, notes on plants either new, or of promise in our climate. Our nurserymen are invited to send notes on any interesting plants received.]

CHIONODOXA LUCILLE—The London *Garden* pronounces this the finest addition that has been made for years to our list of hardy spring flowering, dwarf bulbous plants. It rarely develops but two leaves. The blossoms, from five to ten in number, are produced on gracefully arching stems, from four to eight inches high. They are nearly one inch

across, starlike in form, of a clear blue at the edge, shaded to white at the centre. It was brought from Asia Minor two years ago.

DISOCAETUS BIFORMIS.—This somewhat singular and rare plant at first sight might be mistaken for an *Epiphyllum*, but it differs from that genus in being less dense, and in having the flowers, which are rose-colored, more regularly distributed, and not always on the apex of the stem. It flourishes under the same treatment as that usually given to *Epiphyllums*, and, being a native of Honduras, it wants a considerable amount of heat. It does best as a basket plant.—*Garden.*

BENE PLANT.—Bene is a plant of Arabian origin, and in Oriental countries it is extensively used as food. It is rich both in oil and mucilage, and the green leaves steeped in cold water form a thick, jelly-like mucilage. The oil is often used in preference to olive oil. Its cultivation is simple, being planted like cotton. Twenty-five per cent. of the beans are oil, and twenty bushels per acre, it is said, may be easily raised.—*Prairie Farmer.*—[We saw fine plants of Bene growing in the University experimental grounds.—EDITOR.]

Pomological Notes.

A SEEDLING ALMOND.—Immediately after adjournment, the Chairman, Mr. Lewellyn, drew the attention of the members to a small bag-full of seedling almonds which he had brought with him for examination. The members clustered about him, and, after sampling the larger portion, began to discuss the value of this seedling. In quality, it was pronounced first rate. It has every appearance of a hard-shell almond, but upon examination it was found that the shell was easily broken. The almonds are large and full, with a surprising proportion of double kernels. The kernel is plump, bright colored, and sweet. Mr. Lewellyn states that the tree is very productive, and the nuts are not attacked by the birds nearly so much as other varieties. This, he thinks, is because it so much resembles in appearance the common hard-shell. Each fruit man who was present carried home a pocketfull of the almonds for further examination. We should say that if the tree is hardier and more apt to bear than the *Langue-doe*, it is worth propagation.

SEEDLING FRUITS AT THE STATE FAIR.—Our old friend, I. S. Bamber, of Placerville, made a fine display of seedling fruits at the recent State Fair. He exhibited five varieties of apples, one in size, shape, and color resembling the old Virginia Greening; one in shape and color like American Summer Pearmain, only later in time of ripening; two which resemble green Newtown Pippin, but differ somewhat in shape; and one marked No. 4, a very fine apple in appear

ance, and we should think well worth a further test. The largest of these resembles a Yellow Bellflower, with, however, a smoother, unridged contour, and a deeper pit, and with, further, a rosy red cheek, flecked with yellow dots. Three varieties of seedling plum were shown, but unless the quality is remarkable they are not large enough. The same may be said of two seedling pears, one of very high color, and much resembling a medium fall butter pear.

WILLIAMSON'S SEEDLING APPLES.—Williamson & Co. exhibited a number of seedlings of merit—some their own, others gathered by them—in their nursery business from among the most promising accidental seedlings of different sections of the State. In apples, they show Miliken's Seedling, a large red apple of Sacramento origin. They also exhibit Amador, Allison, Scott's Winter, Andrew's Red, Emperor, Nickerson, and Crawford's Red Winter. Most of these new apples come from the mountains and the rapidly developing foot-hill region where the apple attains great perfection.

SEEDLING PEACHES SHOWN.—Seedling peaches made a long list at the Fair. Day's Cling is a large white cling which originated in Sacramento County. Bennett's Freestone is a white fleshed peach from Solano County, and makes a good appearance. Johnstone's Cling, a richly colored, firm textured, large peach from Calaveras County, deserves much credit. The largest new peach, however, was Frazier's Cling from Solano County. El Dorado also sent some meritorious seedling peaches.

SEEDLING FRUIT COMMITTEES.—Our State Fairs have shown that there are a large number of valuable seedlings scattered over the State, mainly in the old mining regions, where whole orchards have been grown from seeds. It only requires a proper system of committee work in examination, nomenclature and awards of prizes to render this part of our State Fair exhibits a most pleasing and useful display. At present we do not think the committees intrusted with that duty are sufficiently alive to the importance of a thorough examination and comparison. They seldom go more than skin deep, passing by and comparing notes on the mere outside appearance. At the last State Fair there was no exhaustive examination of the quality of new seedlings offered. They were not cut open; the thickness of the flesh, its texture, color, and quality, and the size of the pit, were not compared in different specimens. So we feel justified in saying that the new seedling fruits of our State deserve a more careful recognition than they have hitherto received. One of the proposed departments of the State Horticultural Society will be devoted especially to pomological matters, and we advise fruit growers and nurserymen all over the coast to send that committee, as soon as it is organized, specimens of the seedling fruits of their locality, together with all attainable information on the general subject of seedling fruits.

APPLES AT THE STATE FAIR.—Among about forty varieties of apples shown, embracing Northern Spy, Golden Russet, Rhode Island Greening, Blue Pearmain, Yellow Bellflower, Roxbury Russet, Green Jeniton, Tulpehocken, Grindstone, Esopus Spitzenberg, Limber Twig, Fall Pippin, White Bellflower, Baldwin, Jonathan, King, Wine-sap, and all the well known old favorites, some were grown in the valleys, and some in the mountains. There is a decided difference, worth study, in the forms of the same variety under differing circumstances. The mountain Baldwin is larger, healthier and handsomer than that of the valleys; the Golden Russet, of the mountains, is much the finest; the mountain Gravenstein has the best color. The apples of the richer lowlands, when properly thinned, are often the largest.

Reviews and Exchanges.

[All books on subjects in any way connected with horticulture will be reviewed in this department. Publishers are requested to state the price of each book sent.]

THE SCHOOL GARDEN, being a practical contribution to the subject of education by Prof. Erasmus Schwab, Director of the Military College of Vienna. Translated by Mr. Horace Mann. New York: M. L. Holbrook & Co. Price, \$1.

In the *HORTICULTURIST* for June of the current year, we told our readers something about a plan for flowers in the school-yard, and briefly outlined our views on that very interesting topic. It appears that the same thought concerning the practicability of instituting school gardens has also occurred to others, and is, in fact, a growing and vital idea of the progressive and hopeful sort. As early as 1869 the school law of Germany ordained that an experimental garden should be connected with every country school, and in 1870 Prof. Schwab, being appointed inspector of the Olmutz schools, began to experiment and organize. For once the right man, full of a great and pregnant idea, was in the right place, where he could win a hearing. He published a pamphlet, with colored pictures. It aroused much interest among all classes. Scientific men, leaders of thought, prominent teachers, botanists and naturalists, all welcomed the idea. During the three following years much progress was made, and many large landed proprietors manifested an interest. During the Vienna Exposition of 1873 the model school garden was visited by thousands from all countries. Since then the growth of the school garden thought has been steady and continuous.

This work advocates the systematic use of the educating element which lies in the natural sciences; it is a step toward that ideal school when the moral law shall predominate, love rule, and beauty in its highest sense be everywhere visible. A school garden to every school; this garden made a part of the science of home and nature; the requisites for

a garden; its social and climatic influences; the health considerations and moral stimulus—such are a few of the propositions discussed in this most thoughtful volume. Mr. Mann adds a chapter of practical suggestions on the species of flowers, shrubs, and trees most fit to be used for American school gardens. We have considered the same subject, editorially, elsewhere in this number.

THE RESOURCES OF CALIFORNIA. By John S. Hittell. Seventh edition, with a map. San Francisco: A. L. Bancroft & Co. 1879.

The style of the veteran editor of the *Alta* is remarkable, in this verbose age, for its way of expressing facts in the fewest possible words, and of condensing the results of whole weeks of research into single sentences. Hittell's "History of Culture" would, in the hands of any other man, have been enlarged four-fold, but the terse, methodical habit of the journalist kept it within almost too brief limits. The present work is one which has, perhaps, more than any other disseminated a knowledge of our State among other nations, and it is, in the very nature of the case, much more reliable than the works written by visitors who come here with the fell purpose of paying their expenses by letters, stories, or books of travel based on California life. In its present form it contains 453 pages, and has had a new chapter added which treats of the later developments of the State. Topography, society, climate, scenery, commerce, manufactures, agriculture, mining, geology, botany, zoology, law, etc., are some of the subjects exhaustively treated. The earlier names given to ravine and peak, the glimpses of Spanish days, and the memories of pioneer life, receive that attention which they deserve. Throughout the whole book that faith in California, which might be expected from one who has spent so many years here, is most evident. But it is a faith founded on facts, and fully justified by all attainable evidence.

SUGGESTIONS ON THE MAINTENANCE, CREATION, AND ENRICHMENT OF FORESTS, as applicable to the particular requirements of the colony of Victoria. By Baron Ferd. Von Mueller, Government botanist for Victoria.

We have much faith in the value of those well-considered pamphlets which relate to economic and industrial questions, and which, by reason of their cheapness, are most apt to be widely circulated, and, by reason of their unpretentiousness, widely read.

In this short treatise the author has been enabled, by patient condensation, to suggest many important points. The various questions which naturally arise with reference to forests are, with wisdom, treated under different heads. First, the preservation of existing forests; second, planting of native species; third, planting of foreign species; fourth, the creation of forests in timberless districts; fifth, system best adapted to forest administration in Victoria; sixth, climatic, hygienic, and

scenic influences of forests. In this last chapter there is rare beauty and eloquence.

"Though to my understanding," says the Baron, "there are wide chasms between the thoughts which inspire the human mind, the faculties exercised by animals, and the vitality pervading plants, yet plants also revel in the enjoyments of existence, and that individual life, whatever it may be, which we so often thoughtlessly and ruthlessly destroy, but never can restore, should touch our pity all the more because of its defencelessness. We never see truly happier homes of unmingled contentedness than in the seclusion of the woods. It is as if the bracing pureness of the air, the remoteness of the outer world, the unrestricted freedom from formal restraint, gives to forest life a charm for which we shall in vain seek elsewhere. Let us regard the forests as a gift, intrusted to us only for transient care, to be surrendered to posterity as an unimpaired property, increased in richness and augmented in blessings, to pass as a sacred patrimony from generation to generation."

Catalogues, etc., Received.

[We shall acknowledge the receipt of all Seed or Plant Catalogues, Pamphlets, Reports of Horticultural Societies, Agricultural Reports and similar documents.]

The Bushberg Grape Catalogue; Bush & Sons & Meissner. Bushberg, Jefferson County, Missouri. This is, we believe, the most complete catalogue of American grape-vines in existence. It is a book of eighty pages, containing a description of nearly all existing varieties of the American grape, with also a manual including notes on climate, soil, treatment, classification, etc. Although it does not treat of the foreign grapes, still every viniculturist ought to have it for the sake of its notes on phylloxera, etc. In the higher sierra regions of our State these native vines must be used on account of the severity of the winter.

Innisfallen Greenhouses, Springfield, Ohio. We have spoken in a previous number of the very perfect condition of plants received from this establishment.

The California grape picker; Jas. L. Fink, P. O. box 1267, San Francisco. A little tool said to be very convenient.

J. Jenkins' Nursery, box 45, Winona, Columbia-na County, Ohio.

Cascade Rose Nursery; Leeds & Co., Richmond, Indiana.

Mount Hope Nurseries, Rochester, N. Y.; Ellwanger & Barry, proprietors. These nurseries were established in 1840.

J. Vander Swaelmen. The Lily Nursery, Gendbrugge-Ghent, Belgium.

Germantown Nurseries, Philadelphia; Thomas Meehan, proprietor. We notice that this catalogue is very rich in oaks, maples, and other forest trees.

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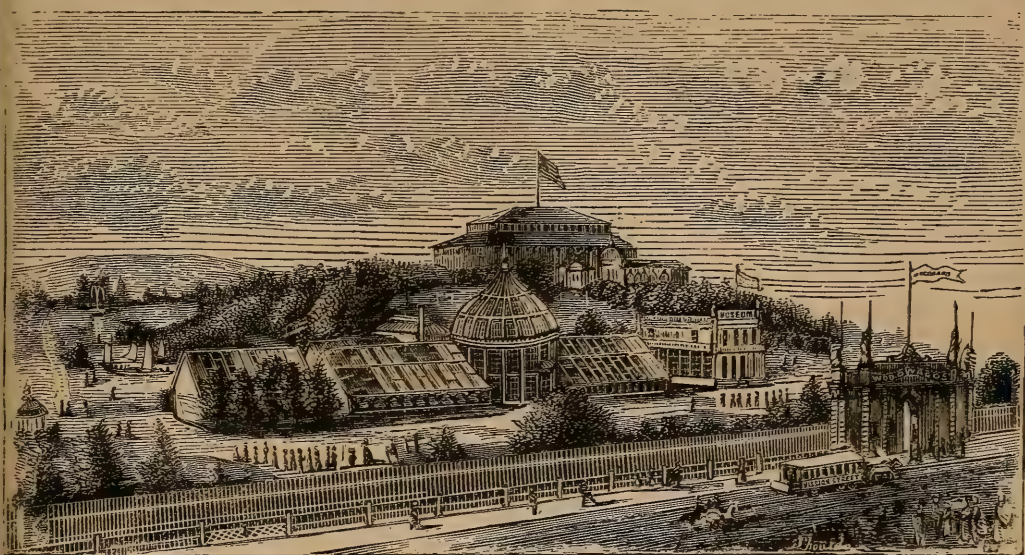
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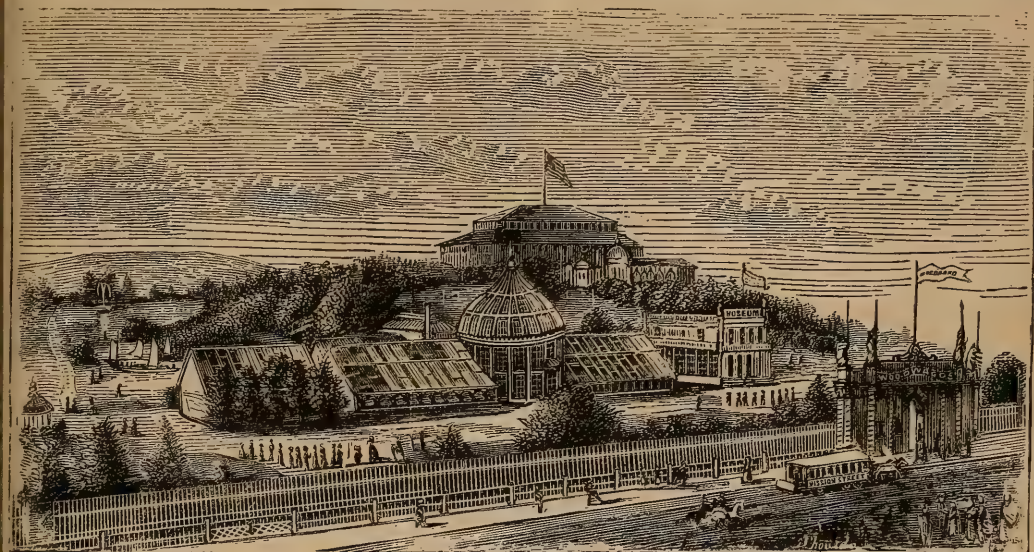
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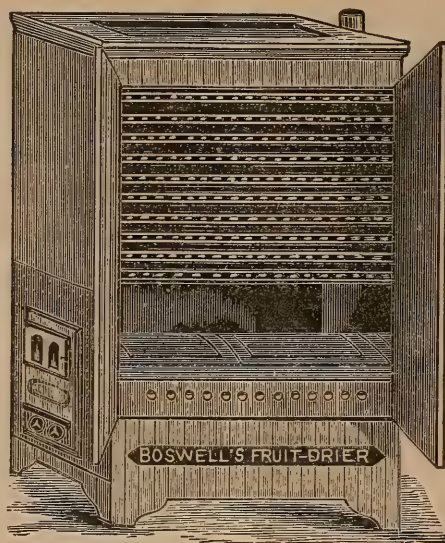
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Vol. IX. NOVEMBER, 1879. No. 11.

THE

California Horticulturist

AND

Floral Magazine.

"Men come to build stately sooner than to garden finely, as if gardening were the greater perfection."
—LORD BACON'S ESSAYS.

CHARLES H. SHINN, - - - EDITOR.

POST OFFICE ADDRESS—NILES, CAL.

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..... AND

FLORAL MAGAZINE,

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AND

FLORAL MAGAZINE.

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No. 11.

Contributed Articles.

WINTER GARDENS.

By MISS S. E. ANDERSON, Santa Cruz, Cal.

Now that winter is coming on, and dahlias and chrysanthemums are taking the place of roses and lilies in our gardens, we begin to appreciate our house plants more and more. Our garden beds are still bright with color, and many of our floral beauties will remain to cheer us through the winter, yet falling leaves are littering our lawns and walks, the buds grow fewer, and soon rain and mud will hinder us from those little daily services to our plants that flower-lovers delight in. The dripping sky will be hose and sprinkler for our pets then, and, as flower-tending seems necessary to the happiness of some people, to such house plants are a special blessing.

When there is no conservatory, a sunny window makes a good substitute, and with economy of space, gained by the use of hanging baskets and brackets, we have a window garden of wonderful extent. Sometimes a little porch can be utilized by walling it in with old window sashes (having panes of course), bought, perhaps, at some auction. A little six by six greenhouse of this sort

has been known to give the utmost pleasure to a whole family. In colder climates than ours, where snow covers the ground the whole winter, and a blade of green grass out-of-doors would be a novelty, many pretty devices in the way of hanging baskets are made by sowing grain in the crevices of a pine cone, and allowing it to grow, or planting it on cotton which floats on water. Green leaves are too abundant with us in our coldest months to have any particular charm, yet there is one thing of the kind which is really beautiful, and worth having. It is made in this way: take a large coarse sponge, saturate it with water, scatter flax seeds thickly over it, and suspend it by a cord. When the flax grows, the sponge will be entirely covered, and you will have a round ball of a most delicate green, and by watering it every day, its beauty will be preserved for weeks.

Whatever else may be lacking among our house plants, we must have a pot of smilax, "climax" as a friend of mine calls it, associating its habit of climbing with its verbal ending. This vine needs a good frame to climb on, as the ordinary stick with slats across is apt to grow top-heavy and is easily blown or knocked over, to the destruction of the plant, frame, pot and all.

The best frame that I have seen was made in this way. Take a smooth stick some two or three feet long, half an inch wide, and perhaps a quarter of an inch thick. Bore holes in this stick at regular intervals of about two inches. These holes must be made alternately, half of them through the half inch dimension of the stick, the rest through the quarter inch dimension. Then a strong wire is passed in a serpentine manner through one line of holes, beginning at the bottom, then down again on the other side through the same line of holes, forming a series of figure eights. Another wire is passed through the other series of holes in the same manner, being at right angles to the first. This frame is much easier to make than to describe.

THE VALLEY OF CUERNAVACA, MEXICO.

By D. S. RICHARDSON, Oakland, Cal.

It was a long rocky slope down which our stage coach rumbled. Rumbled, I say, although the word is too mild to adequately express the movement of a Mexican stage coach over a Mexican road. Tumbled would have been better, perhaps, for the motion to which we were subjected as the eight little black mules flew down the mountain side, and the great swaying vehicle bounded from rock to rock, was of such a violent character that every effort was necessary to prevent bodily injury. There were occasional lulls, however, in the tempest of motion, and then we could look out on the beautiful valley below us.

How many of the readers of the HORTICULTURIST have heard of the valley of Cuernavaca? Lying at a distance of about sixty miles to the southwest of the city of Mexico, surrounded by blue mountains and overhung by the mellow

haze of perpetual summer, it is such a spot as the toiler of the north knows of only in his day dreams. Here Cortez located himself after the fatigues of the conquest were over and assumed the title of Marquis of the Valley, and it was here that the unfortunate Prince, Maximilian, built for himself and his queen a retreat from the cares and anxieties of the capital.

Although the wide domains of our southern neighbor are dotted with beautiful valleys and fertile plains, the agricultural resources of which have not yet been fully developed, there are none, perhaps, which can rival the valley of Cuernavaca in beauty and fertility. Being at an elevation of about four thousand feet above the level of the sea, it is raised above the heat of the tropics and enjoys a warm, even temperature. The air is dry and pure, which fact together with the reduced pressure upon the lungs, due to the altitude, has made it a famous resort for consumptives; and it may be said with almost a certainty that all who go in time are benefited and many permanently cured.

It is the profuse semi-tropical vegetation, however, which first catches the traveler's eye as he rattles down the mountain side, in quick transition from the region of the pine to the home of the coffee plant and the sugar cane. A number of rare, strange fruits, seldom seen in California, grow here in wondrous profusion and with very little care. A stroll along the shady, eccentric streets of the old Spanish town is a perfect revelation. The trees bend low with their burdens of fruit, many of which last the year round, and in an hour's ramble we counted no less than nine or ten varieties which are seldom or never seen in the orchards or markets of the north.

It is not our intention to speak of the orange groves which loaded the air with perfume, nor of the banana and coconut trees with their great clusters of fruit; nor can we stop even to notice the coffee plant whose red berry tempted us on every side, for these fruits are all more or less familiar to the general reader, and we wish to mention a few which are probably unknown to him. Our attention was particularly attracted to a large fruit with a reddish-brown skin which grew in clusters close up to the main trunk of its tree. It is called the *Maméy*, and is highly esteemed by the natives. Its flesh, which is red and soft, clings to one large black brittle seed, the kernel of which is said to be rank poison. In taste the fruit somewhat resembles the sweet potato.

Another fruit is called here the *Chirimoya*. It is as large as a man's two fists and green on the outside. The flesh is perfectly white, and is full of black seeds about the size and shape of a large bean. The taste is pleasantly agreeable, and the Mexican believes that no dinner table is complete without it. If popular report can be trusted, however, the Chirimoya is a fruit to be eaten with great caution. A woman while nursing her child must never touch it as it will poison her milk. If eaten when a person is angry convulsions and contortions will be the result, which may end in the *insulto*, which latter is the common expression for the Saint Vitus dance. Tradition also has it that if eaten with milk the result will be fatal. How much truth there is in these beliefs and traditions I can not say, but they are doubtless exaggerated.

The *Papaya*, which also grows here, is another peculiar fruit. In appearance it resembles a small muskmelon. It has a mealy yellowish flesh, full of

small black seeds, and is sweet and insipid in taste.

The *Zapote Negro*, or Black Zapote, is a fine fruit about the size of an average pear. It has a thin green skin, and flesh perfectly black, filled with small brownish seeds. The popular way of eating it, is with wine and sugar mixed, it being first passed through a sieve to separate the seeds and stringy fibres. Prepared in this way it is really delicious. The physicians of the city of Mexico recommend it for bowel complaints, as it is soothing and cooling in its effects.

Next comes the *Zapote Blanco*, or White Zapote, an entirely different fruit from the one just described. It is large and tough, and contains several seeds the size of peach stones. Before eating it has to be soaked in water several hours, and even then its white flesh is not very palatable.

There are two other varieties of the *Zapote*, known in Mexico as the *Zapote Boracho*, or Drunken Zapote, and the *Chico Zapote*, *chico* meaning little. The first of these is an oblong, yellowish, insipid fruit containing one large stone. Why named drunken I can not say. The Chico Zapote is, however, one of the rarest delicacies of the Aztec land. In size it is about like a peach, and has a rough brownish skin. The flesh is a rich brown, full of juice, and the taste is sweet and refreshing. This fruit brings a higher price than any other in the markets of Mexico.

The *Aguacate*, or Alligator Pear, is more or less known in the markets of the world, and need not be described. In the valley of Cuernavaca it is found in all its bloom. Here it is almost a necessity of life and takes the place of butter, and is a most palatable accompaniment to meat dishes.

Another fine fruit found here in great

plenty is called the *Granadita*. It is a pear-shaped shell filled with pulp and juice and soft seeds. On a hot day I know of nothing more refreshing and cooling.

The queen, however, of Mexican fruits is the *Mango*. When I pass through the San Francisco markets and see the poor shriveled things on exhibition there, my heart goes back to the groves of Cuernavaca where rich and juicy and tempting they hang over every door. He who has not tasted the Mango on its native heath can form no idea of the delicious flavor of this fruit. It is true, however, that a stranger has generally to acquire this taste, but once acquired, it grows on him.

Space will not permit us to more than mention the numerous other fruits, such as limes, lemons, pine-apples, wild plums, walnuts, etc., which grow on every hand in this garden of the south. All the trees which I have mentioned grow at random through the town and have very little care or cultivation. They produce enough for the wants of the people and that is all that is cared for, as there is little or no market for the surplus. What the valley would produce under systematic cultivation, if brought into contact with the world, it is difficult to calculate.

As it is, Cuernavaca is a delicious retreat. A mule trail leads to the south, and from the north the stage coach from Mexico clatters down three times a week. The people are happy and care nothing for the outside world. We could linger untiring over their beautiful scenery, the caves in their mountains, the white peaks of Popocatepetl and Ixtacihuatl in the distance, and the wonderful falls of San Antonio below the town; but it would take a chapter, and we must cease, for the present, our Mexican reminiscences.

ROSES, SHRUBS, AND GARDEN-TALK.

By MRS. N. W. WINTON, Santa Barbara.

An article from Mr. Eisen in the August number, suggests a substitute for our supposed Nankin Rose, namely: the "Claire Carnot." I have two plants of the latter, carefully labeled, and both alike; bearing no resemblance to the one in question. Claire Carnot with us is a half-climber, having made ten feet shoots this season; buds and nearly opened roses are old gold in color, fading on exposure, with none of the salmon, cup-shape of the Nankin, which retains the color of gold and salmon combined for days, and is a low growing standard. I am glad of Mr. Eisen's interest, but he will need to look farther for a substitute name. I find a change of soils and climate alter roses materially, both as to color and fragrance. Our Agrippina has not the same odor at all as the one to which I was accustomed at the East, though the flower is the same, and so with others. The Saffrano is lighter here in shade than at Oakland, and is being discarded in favor of Pearle de Lyon, nearly the same color, but much finer though not so profuse a bloomer.

I wish the floriculturists of the State would give their experience with ever-blooming shrubs and perennials, where Eastern florists can not help us, their conditions being so different. For their summer-blooming qualities, the following are giving excellent results here. *Russelia juncea*, with its crimson needle-like flowers, is always in bloom, and is very graceful in bouquets. *Swainsona alba*, and *rubra*, especially the former, are excellent neighbors, con-sorting well also with *Plumbago*, the three making a fine trio cluster, the colors being lavender, white, and crimson. I have a dwarf Pomegranate, sur-

rounded by a circle of carnations, which have given by their foliage alone a pleasant contrast in color. Such a circle is a fine aid in breaking up a square corner, always a trial to the florist.

The *Stephanotis*, if given a sheltered location, and plenty of moisture, will repay abundantly the extra care, and its perfume comes nearer a *Hyacinth's* than anything else I know of. *Bouvardia jasminoides* is another plant difficult to excel for either beauty or fragrance. The *Amaryllis* family are coming more largely into favor. The variety with the newer shades—the striped crimson and white, and pink—are especially beautiful. The newer sorts of *Gladioli*, arranged in circles around a number of *Tuberoses* and planted a month apart, give fine results; those planted in May will bloom with the *Tuberoses* which are left in the ground.

One of your correspondents asked a question concerning the latter plant—why there were no blooms the second year? The bulb blooming this year has done its work, and small bulblets are formed, which require from two to three years to mature, so large bulbs must be planted for that length of time to secure succession. I have enjoyed some new *Pelargoniums* from John Saul, Washington, D. C.—*Queen Victoria*, *Mrs. John Saul*, and *Madame Seelye*—the latter resembling a pansy in color; and I have a nameless one still darker. I was assured in Oakland and San Francisco that such a color in *Pelargoniums* did not exist. Now I have gathered four from different Eastern sources. The *Vinca* family are very useful, shedding their blooms freely—a great desideratum.

I have tried trimming roses and shrubbery, about once in six weeks, as soon as the flower stalks are done blooming, thereby securing rapid new growth,

and a large increase of flowers. Roots can accomplish only a certain amount of work, and one has only to choose between supporting old growths, rapidly verging toward cord-wood, or fine young shoots, full of buds and blooms. The only encouragement I can rely upon is my old Dutch gardener, who rejoices at every snip of the pruning shears—"Dat ish goot, ferry goot." This plan also secures to me the privilege of doing my own trimming, as the yearly plan necessitates too frequent use of the saw.

Two or three weeks after one of these prunings in July, my husband kindly offered to pick off the old roses for me, and after attacking a *Celine Forester* for a time, suddenly remembered an important engagement at the office, remarking that he had taken off 217—and would leave the others until another pruning. This plant had but three stalks, $2\frac{1}{2}$ feet high, and was only fifteen months old. *Pelargoniums* and *Carnations* are nearly as much benefited by frequent prunings.

I am interested in a new fountain arrangement, a very simple and effective one. The cement work is the same as usual, the pipe ascending through three tin pans painted brown, the first being 22 inches in diameter, 15 the next, 10 for the last. The base is surrounded by suitable plants, and over all is to be built a large arbor, perhaps 25 feet each way, for protection of all growths requiring partial shade and moisture, the spray from the fountain keeping the air constantly moist. The sides will be very open to admit needful light, and it will, I think, be a marked success.

THE Asbestine system of sub-irrigation, so several friends state, works well, and makes water fully three times as effective as in surface irrigation.

OLIVE CULTURE.

By FRANK KIMBALL, San Diego.

A full discussion of the subject of Olive culture can be secured only by constantly presenting it to the public ; nor can it reach those persons most interested, except through that department of literature sought for and read by them. Indeed, it requires something more than merely the assertion of the fact that no person can afford *not* to make the experiment of planting a few Olive trees, or cuttings from which to produce them.

Some interest has already been awakened and it ought not to be allowed to subside, for the time is close at hand when the determination to plant must be carried into effect, or another year will be lost ; which no man who has the land, and the time to plant, can afford. If uncertainty exists in regard to soil or climatic conditions, plant only half a dozen trees or cuttings, in the garden or front yard, cultivate them with the same care which is bestowed on any other ornamental tree, and two or three, or at most four, years will determine whether the conditions required for the perfection of this fruit exist in the locality in question ; if not, they remain as ornamental trees, and certainly are not inferior to any others so highly prized and carefully cultivated around every well cared for homestead.

Take the most unfavorable condition. Suppose frost does nip the top, or even the trunk, the first season. This is delay, not disaster. Give a little protection, by tying a wisp of straw, or its equivalent, around the trunk during a winter or two, till the tree will stand the cold, and the result is a splendid tree—a tree with a history, with countless associations clustering around it—associations which, to those whose

thoughts and affections run back near two thousand years—and their number, in this enlightened and progressive age is not small, nor their influence unfelt—have a peculiar and abiding significance.

The Olive is itself a treasure, and from the remotest ages has been the representative and synonym of wealth, and wherever produced, has been the poor man's food, and heat, and light ; the rich man's luxury. The oil is indispensable alike in medicine and in the arts ; disease is arrested by its application, and the fame of the old masters is revived, as the delicate brush touches the once bright, but now sombre, canvas, restoring it by its almost magic influence. To bring to a people such and so many blessings as the products of the Olive tree secures to man, is worthy of the ambition of a statesman ; and to assist in the development of an industry by which the great gulf between the rich and the poor may be more easily bridged, is a duty from which a philanthropist can not escape.

Nature has circumscribed the limits of her favors, and no other plant of such wide-spread use and indispensable character has its boundary of possible production so closely restricted. Within this charmed circle, however, lies a large portion of our wonderful State. The fact that the Olive constitutes a large portion of the wealth of the farmers of Italy, Spain, France, Portugal, and Austria, is evidence that it may become a source of wealth in California also. The foothill lands of our State, which until a very recent period were considered almost worthless, are admirably adapted to the production of the Olive. Not only is this true, but unlike the cereals or other annual crops, the Olive is not dependent on a certain amount of rainfall every

year, from which to yield a good harvest, thorough cultivation being amply sufficient to carry it through a succession of dry seasons, with no greater damage than a partial failure of the crop.

Hon. Wm. G. Le Duc, Commissioner of Agriculture, in his last annual report says: "The value and usefulness of the Olive, the little attention necessary to its culture, and the waste situations which it renders productive, should make it an object of special attention in a large portion of the United States."

An eminent English author, Mr. P. L. Simmons, while writing of the Olive, states that in France it begins to bear in two years after removal from the nursery, and in six years begins to pay expenses of cultivation; and after that period its products are the surest source of wealth to the farmers.

Comparing this statement with the known results of Olive culture in Southern California, we find that at least three, and perhaps four, paying crops are gathered here before the first one in France. Whoever plants an Olive orchard anywhere in our State anchors an inheritance for generations of his successors. Plant an Olive tree, and it is as a living monument of your wisdom and kindness.

A DAY IN THE NEW ZEALAND WOODS.

By O. S. BRACEY, North Wellington, New Zealand.

How conspicuously some days stand out in one's life distinct from all others. I am reminded of one of these impressive days now, and I will endeavor to sketch it, for it may interest some lovers of nature in her wild aspects.

It was a beautiful morning in the fair spring of the year. The sky was azure with a few white, fleecy clouds gently moving past, and just showing the way

the breeze was going, when I started with my two young servants, and my faithful dog Tommie, for a bush ramble. Taking with us two kits with sandwiches, cake, and milk, I determined to have a long day in the forest, which was about a mile distant from my own house. After leaving the high road we descended a side-cutting on the cliff, the road winding down to the river below us. Beneath the side-cutting the ground sloped almost abruptly to the water's edge, the forest growing nearly to the river, and at the bottom of the slope the tall tree-tops seemed on a level with our feet, and we saw to perfection the leafy mass of the *Asletias* and *Fleycenetias* in the upper branches of these lofty trees, many of them more than sixty feet high. Here and there you caught between the trees a sight of the river, looking in the bright summer morning like a silver line, and beyond it the abrupt cliffs down almost to the water, on the other side of the river, at the bottom of this winding ravine.

We next came to a black pool of water, with the wood on both sides felled for a short distance; then, by a track cut through the bush, we proceeded to the dense forest, and arriving there, eagerly sought for the ferns I was anxious to obtain. Noble specimens of tree ferns—*Cyathea dealbata* and *Cyathea medullaris*—were before us, their graceful fronds extending many feet beyond their trunks, making a dense green canopy overhead. The *Cyathea dealbata*, with the white silvery lining of its fronds, and black hairy trunk, is a marvel of beauty, and words can not adequately describe its elegant form. A majestic *Podocarpus ferruginea*, at least eighty feet high, with a trunk three feet in diameter, stood near.

The "Parson bird" of the colonists,

is so called from having some white feathers just under the throat, showing on the black plumage like the bands worn by our Episcopalian clergymen. These birds are the size of a thrush, and have a perfect gamut of notes, and such pretty curious ways that it is quite interesting to watch them. We soon came to the thicker forest, where a perfect carpet of *Pellaea falcata* were under our feet, and *Polypodium tenellum*, and *Polypodium supestre*, of all sizes and shapes, were climbing up or hanging on the trees. Tufts of *Asplenium flaccidum* were pendulous in masses on some of the tree branches; festoons of *Clematis indivisa*, with its large, beautiful, white, star-shaped flowers, nearly four inches in diameter, scented the air around us; and the *Edwardsia grandiflora*, with its clusters of large yellow blossoms, and its delicate foliage just appearing, formed a beautiful contrast to the dark green leaves of the *Hedycarpa dentata*.

Several fallen trees were lying near, and probably had been there a long time, judging from the delicate *Hymenophyllums* and mosses covering these decayed trunks, all a prize for the collector. Further on, almost hidden by the luxuriant myrtle-like foliage of the *Metrosideros albiflora*, which was climbing over a decayed "Warangi" (*Melicope ternata*), were two young "Moreporks" blinking in the light. These birds are a species of owl, and derived their name "Morepork" from their peculiar cry sounding like those words. They are seldom seen during the day, but at night are heard frequently uttering their curious cry; they are brown, and about the size of a pigeon. On perceiving us they quickly flew to where some large bushes, or small trees, of Pepper excelsum grew near by. This tree produces a kind of aromatic pep-

per; the fruit was hanging in all stages of ripeness from green to a deep orange color, rather hot in taste, and especially liked by the birds, who were many of them hovering near, among them my favorite "Tuis." The leaves of this tree have an aromatic flavor, and were formerly used by the colonists to put in sugar beer instead of hops.

I now thought it time to open our kits, so we seated ourselves under a beautiful "Tiloki tree" (*Alectryon excelsum*), the wood of which is remarkably tough and valued by carpenters for tool handles, and other purposes. Its fruit is a crimson, pulpy berry, surrounding the black seed, giving it rather the appearance of a raspberry. The seed produces a fine oil. The foliage of this tree is very handsome and it grows symmetrically, often sixty feet high. We appreciated our simple fare, Tommie looking pleadingly in my face with his soft brown eyes for a share of cake, which of course he obtained.

Being rested and our kits empty we again started, and soon came to a small gully where we collected several kinds of *Adiantums*, *Leptopteris*, *Hymenophylloides*, and other sorts. Here and there rose a gigantic *Phormium tenax*, many of its leaves being over ten feet in length, and its flower-spike fifteen feet high, looking lance-like in form till it opens its reddish flower buds, which contain honey for the bees; this is the flax plant of New Zealand, and the fibre of its leaves furnishes rope, and much of the flax after dressing is exported.

Large bushes of the *Coriaria ruscifolia* were also in this vicinity. The bush grows ten to eighteen feet high, with a stem eight inches in diameter. The branches are long and drooping, with racemes of small pendulous bunches of black-colored berries, filled with a pur-

ple juice; but the seeds are poisonous, and the foliage a poison to cattle, many of whom are yearly destroyed by eating the leaves of this plant, which is called by the aborigines "Tutu." It grows principally by the sides of streams, on their banks, or in gullies. Many beautiful mosses grew on the stems of the trees over this gully, and quantities of the *Viola Cunninghamii*, with its delicate pale blue flowers, crept up its banks, half buried by the small ferns near them.

Climbing out of this gully, we soon came to a fine *Knightia excelsa*, with its clusters of red flowers, which contain honey; birds and small animals eat the seeds out of the pods before they have time to ripen, so it is difficult to procure seeds of this tree. Hearing a harsh cry in the branches I looked up and saw some pretty green paroquets. Their plumage is very handsome, and if caught young they are easily tamed. Numbers of small "fantails" (*Rhipidura fuliginosa*) were flitting about so fearlessly they almost came within reach of my hand. A *Rhipogonum parviflorum* climbed up a tree near by. It was at least forty feet high, sending up numerous shoots from the ground with straight upright stems, knotted at uneven distances, with a smooth bark, but leafless until it attained a great height. One shoot twists and twines into another, so as to render the spot it occupies impassable for horses or cattle, who often get tied up in these thickets, and starve to death. When these shoots reach some of the high branches of other trees they throw out leaves, and bunches of small flowers, which afterward become crimson berries in fine clusters, which the birds claim as their own. The shoots are most flexible, and are made into baskets, and used for tying, and for other purposes.

They are called by the colonists "Supplejacks." Upon another tree the sweet-scented *Clematis Colensoi* was hanging, its small and pale-green flowers resembling in form *Clematis flammula* in our English gardens. A quantity of *Solanum nigra*, just coming into berry, abounded close by. These berries are about the size of a black currant, but not edible.

As we were now approaching the entrance to the bush, the Cabbage tree—*Cordyline Australis*—became more frequent. These trees are from thirty to forty feet high, and flower bunches are already forming. They are very handsome, and have sweet-scented white flowers; the leaves have long, strong fibres, and are often used by the Maoris to thatch their houses. Several large bushes, or rather small trees, of the *Aristotelia racemosa* skirted the forest with racemes of pink flowers, which afterward form bunches resembling currants, sweet to taste, but very full of seeds.

We now came out of the forest just by a pond which was thickly filled with "Raupo" (*Typha augustifolia*). It looks like the Bullrush of England, and the heads form a fine down, which the old settlers frequently gathered to make beds and pillows of instead of using feathers. We saw in this swampy spot a number of "Pukekos" (*Porophyrus melanetus*). The colonists call it a swamp hen; it is about the size of a pheasant with red bill and feet, black feathers on its back, and blue feathers on its breast, and is very excellent food. On the far side of the river on the shingly beach, many cattle had come down for water; the river was moving with a swift current to the sea. One canoe, paddled by Maoris, was coming up against the current. Before us we saw a party of natives, the men on horse-

back, the women bending under heavy loads of potatoes, which they were carrying on their backs to sell at the nearest settlement. The sun was low in the horizon when we reached the side-cutting on our return with the collections we had made in the forest, which after I reached home took me some time to prepare for pressing. Thus ended this day, which will long live in my memory as one of those days in which nature is seen in her brightest aspect and greatest perfection.

FALL MANAGEMENT OF GREEN- HOUSES.

By ROBERT TURNBULL, Gardener for Mr. Harmon, Oakland.

To have the greenhouse appear well during the winter months, it is necessary to look around and see how we stand with regard to flowering plants for the winter and spring months. By a little foresight during the autumn months, and before the rains get fairly set in, we can provide ourselves with abundance of flowers in the greenhouse.

A few *Primulas*, *Cinerarias*, and winter-flowering *Begonias*, ought to be under way in a cold frame, in a cool and partly shady situation. *Hyacinths*, *Narcissi*, *Tulips*, and other bulbs will need to be potted as soon as they can be procured. *Tuberose*s that have been grown in the open ground will be found in different stages of growth. Those with spikes well above the ground, may be lifted carefully with a compact ball of earth, and potted into six or seven inch pots. *Bouvardias* may be treated in the same manner, and placed in a close frame for a few days until the plants have got hold of the earth in the pots. A few plants of *Heliotrope*, *Cyclamen*, *Persicum*, *Stevia*, and sorts of winter flowering *Fuchsias*, may be grown in pots out of doors, in a partly shady situation. Have them removed into the

house on the approach of cold weather. *Libonia florabunda*, *Mahernia odorata*, and *Poinsettia pulcherrima*, are plants that make the greenhouse gay and fragrant during the winter months when flowers are scarce outdoors. With a collection of large plants of different kinds of *Ferns*, *Dracenas*, and *Palms*, the greenhouse will be a pleasant place to resort to in disagreeable weather.

It will be found that a cold frame is a necessary thing to have in connection with a greenhouse to grow *Primulas*, *Cinerarias*, *Stevias*, and other soft wooded plants. There is a tendency in that class of plants to get weakly and drawn, and besides if they should get green fly on them, it is not so convenient or desirable to fumigate the whole greenhouse or conservatory as it would be to fumigate merely the frame. A frame with lights is not so useful as one which, instead of glass, has laths nailed on the sash with spaces left open the same width as the laths. Such a contrivance is an excellent thing for keeping *Camellias*, *Fuchsias*, or anything that needs a little shade and still wants an abundance of air.

MAKING A RUSTIC BOX.

By MISS M. D. CRANE, Washington, Cal.

The height of my ambition in the flower line, was to possess a rustic box filled with *Flora's* beauties, and, lacking the financial foundation, I almost despaired of ever obtaining it. Time passed by, and whenever I was blessed with a sight of one of these beautiful ornaments in a hot-house or a public garden, the more dissatisfied I became with my forlorn condition. One day I decided to end this perplexity if possible, and for a brief half hour enveloped my head in the traditional thinking cap, and in due time I had every plan arranged for immediate action.

Out in the orchard were ever so many twigs and branches, some of which had been cut from almond and peach trees, others were sole representatives of once thrifty grape vines; so, assorting and gathering a basket full, I proceeded to select the most crooked and queerly grown ones for use. Hunting up old boxes of various shapes and sizes, and arming myself with a small saw, a hammer, and some nails, I finally managed, by dint of patient and varied experiment, to nail together the pieces of two boxes in this shape: First of all I found, among some old lumber, two pieces of plank that had been left over from the original piece, which had been sawed in shape for the side supports of a flight of stairs. These just suited me, and I quickly confiscated them to my own use, half fearing that my luck was too good, and that some one would presently appear on the scene and lay claim to them. Fastening my two side supports together at the top and bottom by means of a lath, rather weakly sustained by nails, I modeled the back and sides of two boxes, sawing them just the length of my frame. The edges looked rather jagged where they had been sawed off, but I smoothed my ruffled feelings and whispered to myself "never mind, it looks pretty good." I proceeded to tack the crooked twigs across the front of each box, and it really began to look like something. Now this was fun! It began to grow quite interesting, and as a finishing ornament, I made the rustic work terminate in a distinguished looking peak, at the top of the back. My boxes fitted very nicely, and when all was finished, I stood at a distance with folded arms, and viewed the result of my labors, and I felt satisfied.

The next day a trip to the Niles Cañon was necessitated, and with

arduous zeal I climbed steep, rocky defiles, and pursued tortuous paths with thoughts bent upon securing ferns and mosses to suit my taste. The year had been a dry one, and my climbing did not prove as satisfactory as I had anticipated, but some choice bunches of delicate maiden-hair, and plenty of lovely moss, with a few silver-backed ferns, filled my basket. I carefully stowed away under the buggy seat a box of moist, rich earth, just such as my ferns had been accustomed to, so that they should not mourn for their wild home, and droop and die.

My rustic box was soon finished. I planted lobelias, Kenilworth ivy, running moss, and my ferns and maiden-hair, with a thrifty dainty pink begonia in the centre of each box. I kept them beneath the shade of a broad-leaved fig tree, where plenty of warmth with some sunshine, and but little wind, could reach them. In a few weeks the first marks of their removal began to wear off, until they began a natural growth, covering over the roughness and outline of my structure with soft trailing moss and modest upright beauty. I moved my treasure to the north side of the house and placed it in a sheltered nook upon the porch within a few months, and now it is one charming mass of loveliness, and where the clinging, drooping vines part, my endeared rustic work is visible, and one of my cherished dreams is before me in pleasant reality.

CAMASS ESCULENTA AS A FOOD PLANT.

By B. B. REDDING, San Francisco.

EDITOR HORTICULTURIST:—With this you will receive a small package of the Camass (*Camassia esculenta*), a part of a package kindly procured for me in the northern part of the State by Mr.

J. G. Lemmon, our mountain botanist.

The Camass is more prolific than the potato, of a neutral taste not unlike the potato, and has been, for countless ages, the principal food for vast numbers of people. I have an idea that new sources of valuable food for civilized man can be found by making a study of the different vegetable growths used by our aborigines, and that, perhaps, some of these can be increased in size and in yield.

The potato still found growing wild in the mountains of Chile and on the Island of Chiloe, yields but few tubers, not larger than nutmegs. Its increased yield and size on cultivation are due to man's interference in judicious selections and more favorable environment. I have no doubt the Camass in its wild state as I send it to you, not larger than a small onion, can by cultivation be made to grow so that each bulb will weigh half a pound. It is very prolific, and in its native home almost takes possession of the ground. A friend, who is a botanist, with two companions, once lost the trail in the mountains above Yosemite, and they were out two days before they found their way back. On the first night when one of the party complained of suffering from want of food, my botanist friend went to the edge of what had been a marshy piece of ground, and with a stick, in a few minutes, by the light of the moon, dug sufficient Camass bulbs to give them a fine supper, which they cooked in an oyster can that one of their number was carrying for a drinking cup. The next day they had their regular meals of Camass and found their way into the valley, not feeling that they had been deprived of food.

Many a man has suffered for food in our mountains not knowing there was an abundance growing at his feet.

If you have opportunity will you not try and see what can be done in the cultivation of the Camass, or give the bulbs to some friend who will make the experiment? As its flowers are rather pretty it might also make an addition to the flower garden.

FACTS ABOUT FRUIT.—No. 2.

By M. P. OWEN, Soquel, Cal.

The other day a neighbor told me that he intended to grow more French Prunes, for he thought them the best market and drying prune we had. I asked him what he called a French Prune, and he took me into the orchard and showed me what is generally called the Petit d'Agen or Burgundy Prune, and said it was generally called the French Prune by the fruit growers through the Santa Cruz Mountains, and about San Jose. I asked him what the next best was, and he said the German Prune, and took me to what is generally called the Fellenberg Prune.

Being just ready to start on a tour of observation over the mountains, I put a few prunes in my pocket, to show to others, to see what they would call them. The first fruit grower I called on said that the small, reddish purple, oval-shaped prune, was the French Prune (the Petit d'Agen), and the larger, dark blue, nearly round prune (Fellenberg), was the German Prune; and that they were so labeled at the nursery. I then produced a smaller, dark blue, oval-shaped prune, known in Oregon as the German Prune, and he did not know what it was. But he said the German Prune (Fellenberg), was the most profitable prune of any he knew of, for they were tolerably good bearers, sold readily in San Jose at two and a half cents per pound, for shipping to Chicago, and were an excellent

drying prune. But he said the French (petit) Prune, was a greater bearer, and equally as profitable to dry. He sells his dried fruit (pitted) in San Jose at fourteen cents per pound. He says that his prunes bear regularly, and are never troubled with insects, or anything else.

This gentleman then showed me his apples—Newtown Pippin, Nicajack, and a large red apple he calls the Hoover, which is quite showy, a good bearer, and finds ready sale, but is not a ready keeper. He says the Newtown Pippin is the most reliable market apple he has; being a sure bearer, good and uniform size, a late keeper, and of ready sale at good prices. The Nicajack is a poor bearer, inferior fruit, and not much of a keeper; and he is going to graft them with Newtown Pippins.

Now the facts which I gathered at this place will apply to nearly the whole Santa Cruz range of mountains, both in Santa Cruz and Santa Clara counties. But there are some other facts connected with this gentleman's orchard that will not apply to very many orchards in that region, or any other that I have visited; and that is, he has kept his trees in splendid condition by proper pruning and cultivation; and the result is, that his trees are well loaded with large, healthy fruit, which finds a ready sale at good prices.

I might as well mention another fact in connection with this orchard, for it applies to many orchards and settlements; and that is, there is a confusion of names with regard to prunes and plums which is quite troublesome, and ought at once to be remedied. Suppose that I should conclude to plant a large orchard of prunes, and call upon this man to give me the names of the prunes that were doing so well with him, and were such ready sale, at

paying prices, and should go to some nurseries that I know of and get my trees according to the names my friend had given me, the result might be a grievous disappointment when the trees came into bearing. Four years ago last spring, I took a list of prunes and plums to a nursery, which list I had made out according to Downing's and Thomas' fruit books, and when the trees came into bearing, there was not one in four true to name, according to Downing; and my pears and cherries were still worse. Now, I don't know whether this was the result of ignorance, carelessness, or rascality, or a little of all three; but these are facts, and I think when taken in connection with many other facts that might be mentioned, they would be a pretty good argument in favor of a horticultural society, or fruit growers' convention. At any rate, the nurserymen should be agreed about the names of the fruit trees they sell. When a person plants trees with a view to growing some particular kinds of choice fruits, and the fruit turns out to be something else, and a worthless kind at that, it may be a serious loss, as well as a disappointment. So when you buy trees, be sure that the nurseryman understands it as well as you do.

THROUGH THE NORTHWESTERN COUNTIES.

By VOLNEY RATTAN, Teacher of Botany in Girls' High School, San Francisco.

The gorgeous display of foxgloves, running wild on the hill slopes around Humboldt Bay, must have attracted the attention of all who, in May or June, have traveled the road leading south from Eureka. I believe this plant (*Digitalis purpurea*) has nowhere else in America become completely naturalized. Humboldt Bay seems to be pe-

caliarily hospitable to immigrant plants. The common Eastern dandelion displays its homely yellow rays along roadsides by potato fields where the Canada thistle has fixed its deep seated stems in defiance of the farmer's plow; and the white daisy disputes the stumpy ground of devastated forests with the shy star-flower (*Trientalis*) of the red-woods. I doubt not that whoever drops the seeds of the white pond lily in one of the many forest lakelets of this region, will be rewarded by a floral display rivaling the ponds of New England.

From Eureka a wagon road winds upward through a redwood and spruce forest some 3,000 feet to Kneeland's Prairie. Along this road, in the semi-shade of an open spruce forest near the naked summit, is a natural garden of a rare *Pentstemon* which I discovered last year. The stems, growing in clusters after the manner of that genus, are from one to three feet high, bearing a rather short, slightly viscid raceme of light blue-purple flowers, which are a little broader than those of *P. heterophyllus*, and an inch in length; the sterile stamen (tongue) and the lower lip of the corolla are sparsely covered with long frosty hairs. The rather finely toothed, thin leaves are often five or six inches long, and over an inch wide. I found this year a small variety (*P. Rattanii*, var. *minor*) on Indian Creek, near Happy Camp.

Over the many slopes and hollows of the prairie there is a luxuriant growth of wild flowers, the most remarkable of which is a larkspur (probably *Delphinium trolliifolium*), with large varnished leaves and a long raceme of large, deep-blue flowers. It is known to the stock men as cow poison. In one of these nooks I found a new *Collinsia*—too small to interest a gardener.

Hall's violet grows on sunny knobs along with the common dog-tooth violet, and the deep, rose-colored gillias.

The trail from Arcata to the Klamath River passes through forests remarkable for the number of parasitic plants belonging to the order *Ericaceæ*; the most notable being the common Eastern Pine-sap (*Monotropa hypopitys*), *Allotropia*, *Newberrya congesta*, and *Newberrya spicata*; the latter is a new species. Here, too, grows the rare little orchid *Calypso*. On a naked ridge grows another new *Collinsia* (*C. linearis*, Gray), and a new violet (*Viola cuneata*, Watson). Only botanists care to know that the obscure little *Chrysosplenium glechomæfolium* grows along a cold rivulet near Long Prairie. A red flowering honeysuckle (*Lonicera ciliosa*) is worthy the attention of florists. *Collinsia grandiflora* is the most common species of that notable California genus. In places *Calochortus Mawcanus* gives a blue tint to the sunny slopes, much to the delight of Indians who eat its bulbs. The lovely trailing phlox (*P. adsurgens*) and twin-flower (*Linneæ*), grow on cool wooded ridges. The former is abundant on the Klamath, seventy miles farther north, and the latter grows on Indian Creek, even down to the water's edge. On the Klamath I found five species of *Catchfly*, one probably a new variety. That curious parasite, in fruit so like a pine cone, with the weighty name *Boschniakia*, is met at every turn. The Indians call it "the squirrel's grandfather."

The trail from Happy Camp over the Siskiyou summit to Waldo, in Oregon, crosses midsummer snowdrifts, from which the greater snows of Shasta may be seen looming above the nearer Salmon peaks. Here grows the snow-plant (*Sarcodes*), and near by I found a new *Prosartes* (*P. parvifolia*, Watson), with

fascicles of drooping, greenish-white flowers. A common plant at the west foot of the mountain is *Hastingsia*, a recently found genus (named for S. C. Hastings, who has materially aided in the publication of the volume on our California Flora).

On the Crescent City trail, just within the Oregon line, *Darlingtonias* lift their snaky leaves in several bogs which reach from far up the mountain down to the Illinois River. Here *Vancouveria* has golden yellow flowers, and *Dicentra formosa* masquerades in creamy white. On the summit a very leafy-stemmed, dull purple lily is abundant—a possible new species. On the banks of Smith River, sixteen miles by trail from Crescent City, is probably the extreme western outpost of *Darlingtonia*. A few miles below there is a magnificent forest of redwood, the northern limit, excepting a grove in Oregon, of that most valuable California tree.

[Mr. Rattan was, when we knew him first, a busy teacher in Santa Cruz. Occupying now a wider field of usefulness, as teacher of botany in the Girls' High School of San Francisco, he has developed a sensible habit of making long excursions in his summer vacations. The last trip, of which his article gives a glimpse, was through the north-west counties of California—Humboldt and Siskiyou, and along the borders of Oregon. His next trip, if nothing happens to prevent it, will be among the peaks of northern Trinity County, where there is a comparatively new field.—
EDITOR HORT.]

OUR TEA PLANTS.

By MARY E. PULSIFER AMES, Auburn, Cal.

In February last, the writer received from the Department of Agriculture a quantity of tea seed for experimental cultivation, a portion of which was

given to a friend—one of the most successful of California fruit growers—for trial.

Both quantities were planted on the 24th of April, and were from twenty to forty days in germinating. Many of the plants have now attained a height of six inches, are healthy and vigorous; have grown on red soil without any special attention except an occasional hoeing, care being taken to irrigate only with clear water. When young, the plants require protection from the heat of summer, which, in the present instance, was secured by driving stakes along the rows at regular intervals and placing over these narrow boards or strips of canvas, allowing room for growth, free circulation of air, and plenty of light.

The tea plant is a beautiful, half-hardy evergreen shrub, with dark coriaceous and firm foliage, closely resembling the splendid camellia; from the seed it does not flower until the second, and no leaves are picked before the third year. With due care in cultivation, there can be no doubt that this profitable Asiatic shrub may be as successfully grown in our foothills and valleys as in its native region; and the day is probably not far distant, when tea culture will be numbered among the many remunerative and constantly increasing branches of Californian agriculture.

CACTI IN UTAH.

By A. L. SILER, Kane County, Utah.

Yes, I have an affection for Cacti. Is there anything wrong in loving them? They are beautiful, even if they do tacitly declare "I will be respected; you must handle me carefully." Indeed, most of the real beauty of Cacti lies in what people call their ugliness—it is beauty of form, of spines, of

brilliant flowers, and of the localities and surroundings where they love to grow. The ardent collector finds them where more fashionable and fastidious plants refuse to grow. They cling to the barren rocks, cover the dreary sand, cluster about granite points, and fill up places which would otherwise be vacant.

In shape, style of growth, and of flowers, there is a wonderful variety. Some Cacti are round, others flat, others ridged, or fluted; some have scarlet flowers, others yellow or snuff-colored, or white, or pink, and two or three varieties have rich purple flowers.

The Cacti have as subdivisions, the Echinocacti, the Echinocereus, the Cereus, the Mammillarias, and the Opuntias. Some of these are single masses like a globe, others have many leaves; some stand up like trees, while several kinds grow almost in the ground, or are of a trailing nature. Species of all these divisions we find in southern Utah, northern Arizona, and southeast Nevada.

Although Cacti appear so thorny and forbidding, many of them are edible, and being very cooling, allay the thirst of the tired traveler. Of varieties we have in this locality — *Cereus Engelmannii*, *Echinocactus Johnsonii*, *Echinocereus phonicus*, *Mammillaria chlorantha*, *M. vivipera*, *M. Mexicana*, besides two other *Mammillaria* which I found last April, and have not yet had named. We also have *Opuntia sutilla*. With half a dozen other *Opuntias*, I must not forget *Echinocactus Whipplei*, which is just coming into cultivation. The demand for Cacti seems to be increasing, as they represent so many climates and treatments, some being adapted to cold climates, and others fitted best for hot-houses. At some future time I will take up the subject and give a description of the varieties found in this region.

AUTUMN SONG.

By MAY N. HAWLEY, North Columbia, Nevada Co.

In the mellow autumn-time when the fruits are red,

And the rustling yellow leaves flutter crisply down,

There are watch-fires kindled on every mountain head,

And the ivy flames moronely 'mid the oaks pale brown.

In the orchard there are trees hung with scarlet globes

Of the fruit that wrought dissension in Eden-land,

And the meadow hath a brilliance of colored robes

Where the strawberry crimsons with the autumn brand.

And goldenly the lances of the sunlight turn

To the last peaches ripening above the eaves,

And where the vineyard rows in yellow glories burn

The luscious grapes are hid beneath the tawny leaves.

Through the rarest hours of autumn comes a whisper low,

And I know that just beyond it the storm-king waits,

Even now the morning air is blown from off the snow,

And the winter clamors close to the harvest-gates.

GARDENS AND CONSERVATORIES OF CALIFORNIA.—No. 1.

By CHARLES H. SHINN.

THE STANFORD AND HOPKINS CONSERVATORIES.

About three months ago, we received an invitation to visit some of the private gardens and conservatories on the coast. We dropped in upon Mr. Holbrow, and took some notes of the plants of interest under his charge at Leland Stanford's residence, and we gathered up a multitude of other brief notes elsewhere. But the subject grew upon us. We, after many visits and calls, came to the conclusion that more than mere notes were required, that, in fact, we had material for a series of articles

which should tell our readers what the wealthy citizens of California are really doing in the growth and the delight of flowers. We do not promise much regularity, or mere monthly installments of these articles, but sometime during the course of the next year, as opportunity offers, we shall continue them, and shall be glad if the private gardeners of the coast will assist us by sending lists and descriptions of new or rare plants received, or in bloom, and by notifying us of the best time to visit them. Our notes for this month are on the gardens and conservatories of Leland Stanford, and those of Mrs. Hopkins, both on California Street, San Francisco.

Nearly everyone in the State has, at some time or other, passed up California Street, and climbed the rounded hills on which the half-dozen costliest residences of the Pacific Coast are built. They are worth study, being in this new land a sign and a marvel; and their building and furnishing gave employment to many a laborer, artisan, and artist. The spending of accumulated money is a public benefit, the ravings of would-be reformers to the contrary, notwithstanding, and when we see the gate-ways of polished granite in front of Leland Stanford's residence, we think of the toilers who cut them in dim quarries, and were glad that the work was given them to do.

Leland Stanford's conservatories are under the charge of Mr. Henry E. Holbrow, a cheerful and capable gentleman, who keeps everything in the best of order. The conservatory consists of one main building, with a roof of sufficient altitude to accommodate Palms, Bananas, Tree Ferns, and other tall plants, and there are two wings of lesser height, one on the south, where the light is better, and one on the north, for the choice collection of Ferns. The

alternate rows of lights are of blue glass, and the remarkable, but not always pleasing, effects of the mingled light on the appearance of plants below attracts immediate attention. A *Coleus* leaf is made more brilliant, and sometimes a spot on the soft carpets of *Selaginellas* appears as if it were a mass of blue lobelias, but begonia leaves do not take well to blue spots. There does not seem to be any particular increase of plant growth from the use of blue glass. South of the conservatory are the propagating houses, and what one might call the laboratory from which so many lovely effects of bloom and foliage are evolved. Here, in melancholy rows, stand the hanging baskets which have been in the parlors and halls of the house until they have become *passe*, and are sent here for the renewing art of the undergardener, who puts in fresh soil, and plants more appropriate to the season, and then returns them to the house. Here are frame cucumbers growing in heat, and with fruit already a foot long. But we must return to the conservatory. In the main building, a Banana, planted in the centre, has two stems reaching to the roof, and the blade of each leaf is eight feet long and three feet wide. This is flanked by two large tree ferns, the trunks of which are clothed with orchids, and many other plants wired on, and all thrifty. Among those so growing we observed several *Anthuriums*, and *Tillandias* (which last belong to the *Brômeliaceæ* family), a *Dichorasandæ undata*, and, hung close under the fronds, blocks on which *Platycerums*, or Stag Horn Ferns, were growing. Of this last we noticed *P. grande*, a rather rare species, and *P. alcicorne*, the older kind.

Besides *Cissus discolor*, the most conspicuous climber in this house is the *Allamanda Hendersoni*, a truly magnifi-

cent plant, with its clusters of large, golden cups. Here, also, was a fine *Chameodora Sartorii*, a plant with a peculiar habit of sending out a blossom stem at right angles to the stem and from each joint. At the east end of this room is also a noticeable specimen of *Monstera deliciosa*, formerly known as *Philodendron Pertusum*, which is now in blossom, and has a half-grown fruit upon it. This plant, with its large, punctured leaves, was fully described in a recent number of the *HORTICULTURIST*, so we will only say that the blossom is of a creamy white, and the fruit is quite good to eat, its flavor being like that of a mealy apple, with a slight hint of pineapples. Another really rare and choice plant here is the *Strelitzia Angusta*, now twelve or fifteen feet high. This species is called the best of the family to which it belongs.

In the fern house we could not but notice *Todea superba*, probably the finest specimen in the city. *Blechnum Braziliensis*, with its young fronds of reddish purple, and *B. corcovadensis*, whose young fronds are light grass-green, are worth a glance. The large specimens of *Adiantum Peruviansis* appear well.

In another part of the conservatory we found a remarkable plant, the *Diffenbachia Wierii*, called the "Dumb Cane," because it is reported that if a person eats a piece of the stem it will cause temporary loss of the power of speech. We dare not suggest that a fine medicine for those afflicted with too much desire to talk might be made from this peculiar *Diffenbachia*, which, aside from its traditional powers, is really a very handsome and stately foliage plant. Here are also some *Zamias* of rare beauty. It is worth while to notice how a *Zamia*, so closely related to the palms,

yet unfolds its leaves like a fern, and it has been termed the connecting link.

Immediately west of Leland Stanford's, and a little higher up the hill, are the pointed towers and stately front of Mrs. Hopkins' residence. Mr. Mark Walker, the head gardener, who lately came here from Scotland, showed us around. He is an enthusiastic lover of plants, and is full of bits of information concerning them. We expect that each successive visit we make will show a decided improvement in conservatory affairs.

The stove-house, which we visited first, is well arranged, and contains many good plants. It has lately been overhauled, re-arranged, and brought into better order. We first notice the lovely *Gleichenias*, of which three species are here represented—*G. spelunca*, *G. dicarpa*, and *G. dichosoma*, all thrifty, and exhibiting the flowing outlines of their graceful pinnate and duplicated fronds, and long, climbing stems. The *Gleichenias* are ferns of a climbing nature, and we have always admired them. They propagate by division of the root. Among a multitude of *Crotons* of different species, the most brilliant just now are the *Undulatum* and *Hookeri*, rather old species, but still pleasing when well grown, and spotted with gold on their wavy leaves. Some newer species of *Crotons* are not yet old enough to show for much. The *Alocasia metalica* is always worth mention, for its large and wrinkled leaves are fairly scintillant. The upper side of the leaf is a dark, rich, changeable, bronze color, antique and beautiful. The lower side is purplish-red, with a creamy white, almost transparent margin, which circles it like the lip of a rose-tinted shell. Another old stove plant, but seldom seen, however, is the *Sphenogyne latifolia*. It is a hairy sort of a

creature, whose stem and terminal bud look fortified and armed, while the large, curious leaves are ridged in a circle. A pair of charming vines were the *Echites*, both the silver-veined and the red-veined. A more delicate and handsome leaf than the latter, it would be difficult to find. Two more plants new in this section were the *Encholirion Saundersii*, and *E. roseum*, which, in due season, send up a flower-stalk, and bloom beautifully. Some dazzling *Ixoras*, of orange-scarlet, lifted their trusses of tubular flowers among *Zamias* and *Dracenas*, and *Gesnerias* of sorts, particularly *splendens*, were blooming on the side benches. Cuttings were in process of rooting under glass-roofed boxes at one end, as it was a warm, tropic sort of place, crowded with shrubs and vines, and with orchids of the commoner sorts clinging to boxes and wood blocks at every convenient angle.

The fern-house is well located, with walls of rock and most natural mounds and piles of splintered fragments. It ought to be stocked, in the course of time, with one of the finest collections of ferns in the United States, as it is roomy and the conditions are so favorable. At present one wall is covered with *Begonias* and with climbing and basket plants of no particular merit. The collection of ferns which grow in nooks and pots include the best *Adiantums*, *Lastreas*, and others. The *Nipholobolus lingua corymbifera* has, as all gardeners know, most curiously twisted and subdivided and reduplicated ends to each broad leaf. *Selaginella paradoxa* is a graceful little plant, and by no means a common species here. At the end of the fern-house, growing from a crevice and reaching up towards the roof, is a vine of *Mykenia scandens*. We ought to speak of the

water-basin in the centre of the fern-house with its overarching plants, and pillars wound with *Selaginellas*, for if it were only a little deeper and filled with aquatic plants and fish, it would be even lovelier than now.

From this point we went into the south conservatory in the house, a large room, where there is a place for much in future. In the centre is a large tank, now empty, but designed for water-lilies. If a separate house is ever erected for lilies, this tank will be filled up and made a mass of tropical bloom and foliage. Arrangements are made so as to light this room at night with four electric lights, and the effect must be charming. We should recommend a larger assortment of the best tropical climbers upon the walls. The wire bridge over the water tank, on which plants rest, is a good idea.

Next came the west conservatory, on the same floor, where there was a good lot of tree ferns, both *Cyatheas* and *Dicksonias*; and some strong plants of *Pandanus*, both *utilis* and *elegantissima*; besides *Seaforthias*, and other palms; and some good foliage plants, including the best specimen of *Sanchesia nobilis* we have seen. This latter plant is particularly well adapted to the climate of California, and attains a brilliancy of marking seldom seen elsewhere. The upper conservatory is reached by ascending a winding stairway, and it presents at this season a better appearance than either of the others, most of the parts being selected specimens of good size. The centre of the room is occupied with palms, grouped artistically, and about the borders are masses of foliage and flowering plants, prominent among which latter are the glowing *Strelitzias*, *Cycads* and *Pandanuses*, *Zamias* and *Date Palms*, *Yuccas* and *Dracenas*, together

with a good plant of the silvery-leaved and stately *Beaucarnia glauca*, fill up this room.

Correspondence.

[The editor of the CALIFORNIA HORTICULTURIST cordially invites all persons interested in any branch of horticulture to send practical questions and notes of their own successes and failures. A brief, unadorned statement of events in one little garden may often prove of universal interest. Short notes from busy people, all over the Coast, will make this Department fresh and valuable.]

THE WOOLLY APHIS BUSINESS.

EDITOR HORTICULTURIST — Dear Sir : Woolly Aphis. Know him? Hard case. Gets on the apple trees in summer, makes knobs on the bark, and covers the knobs with a whitish, sticky wool. Gets down in the ground in winter, and makes knobs on the roots of the trees. By-and-by—a long time—it kills the tree. The small ants seem very fond of the woolly aphis, and take *good* care of them.

How does the aphis get down into the ground to a depth of three feet in stiff clay soil? That is what I want to know. The aphis when it is a fly is a frail, soft little thing, and when it is a "louse" it is still more soft and frail—about the size and firmness of a pin-head made of apple-butter.

Has it any other epoch of formation in its career which should enable it to burrow in the earth? If not, I ask again, how does it get down there? A Frenchman, whose ancestors came from Limerick, once told me that an angle-worm commenced at the bottom of his hole and dug out; but when I asked him how the worm got down there, he told me, with emphasis on the worm, "that was the worm's business." Then when I asked him how the worm could dig his hole without throwing the contents to the earth's surface, he said "the wurrum swallid the howl as he came

up." If such is the way the woolly aphis works it, it's all right; but I do not think it.

In case no other explanation is given me I guess I will conclude that the small ants carry the aphides up in the spring, and down again in the fall. I guess at this because I have seen a tree afflicted with aphides and this tree had its trunk surrounded by a woolly—sheep woolly—fabric in winter to prevent the cats from clawing the bark. The next summer that tree had no aphides above the woolen belt—and no ants either. The belt, be it stated, was a close fit.

Now, in this case, did the aphides stay away on account of the ants, or did the ants stay away on account of the aphides, or did they both stay away because they could not travel over the woolen belt? Or was it all a coincidence merely?

The fact still remains—that the woolly aphis gets down into the ground. How does he do it?

Yours truly,

J. W. GALLY.

[We expect the Dr.'s "stiff clay soil" cracks somewhat in summer, which will account for the descent of the woolly aphis. They do not do it on sandy soil, at least not in our experience. It has also been suggested that the aphis descends along the roots, puncturing the bark as he goes.—EDITOR.]

HORTICULTURAL FRIENDSHIPS.

Mr. Wm. T. Harding, an old and long known contributor to the *Gardener's Monthly*, and other journals, writes to us from Sandusky, Ohio. He speaks of the island-continent of Australia, otherwise known as New Holland, where he spent some years, and goes on to say: When in California, some twenty years ago, I was agreeably surprised to

find so many trees, shrubs, and plants, indigenous to Australia, growing as though they were "native to the manor born." In a country so highly favored as is yours, where nature seems so lavish in her choicest gifts, your excellent magazine must, and will, find appreciative readers. Its success is certain, I feel assured, as all who are so fortunate as to peruse its pages will be materially benefited thereby. Neither is it of local interest only, but is a valuable addition to the horticultural literature of the world. Associated as I have been with floral admirers and tree lovers in various parts of the world, I naturally feel deeply interested in the profession I have so long followed. As you, Mr. Editor, are "one of us," you will readily understand the nature of the tie which so closely binds together the social craft, who love kind and gentle Nature, either in her native haunts, or cultured grounds. Being so happily situated, you will readily comprehend the reason why your correspondent still entertains the same zeal and affection for fair Flora which he did in days gone by, when boy lover as he was, he ardently wooed her—and as the poet has it, he "will fondly love on to life's close."

FERNS AND FERN ETCHINGS.

Mr. G. E. Davenport, of Boston, whose Fern Catalogue is referred to elsewhere, writes us a chatty and cheery letter, and goes on to speak of a recently published work which deserves the attention of fern-folk. Mr. Davenport says that—

Mr. John Williamson, of Louisville, Kentucky, author of the popular handbook of the "Ferns of Kentucky," has published under the title of "Fern Etchings" a book that will delight all who love ferns, whether for their natural grace and beauty of form, or as in-

teresting objects for botanical study. The etchings are printed directly from the original copper plates, and each plate is accompanied by a brief description taken, with a few exceptions, either from "Gray's Manual," or "Ferns of North America." The scope of the work embraces the geographical range of Gray's Manual, and all the ferns of the Northern, Middle, and Eastern States are represented by faithful figures drawn from nature. The remarkable grace and beauty of Mr. Williamson's etchings, their absolute freedom from stiff lines, the natural appearance of the ferns that seem to live and grow beneath the skillful touch of his intelligent needle, the instinctive feeling with which he catches the very life and spirit of the ferns and expresses so admirably their various textures, will make this new work of his a treasure in every fern lover's library.

[We learn that single specimen etchings will be mailed by Mr. Williamson on the receipt of fifteen cents. The work embraces sixty-three etchings. Every impression will be an artist's proof. The whole work costs \$7.50. The edition is limited.—EDITOR HORT.]

CINNERARIAS.—We saw in the early days of September, in one of the floral depots of Oakland, a lot of young plants about two or three inches in height, which, to the casual observer, would appear to be a good growth of that well known and vigorous weed, the mallows. We knew them at a glance, and also how they came to be there, for early in the opening of the year we were in the same greenhouse and beheld as fine a lot of Cinnerarias as was ever exhibited in the city. The plants were allowed to perfect seed and it scattered on the rich sandy soil under the staging and hence the result.

If the plants are potted off they will bloom by the first of December.

W. A. P.

BRIEFS OF CORRESPONDENCE.

Baron Von Mueller has again sent us a package of seeds, which we shall take great pleasure in testing.

When you are planting vines remember the "Bona Nox" *Convolvulus*, and also the *Pilogyne Suavis*.

Prof. H. B. Norton has a valuable article on the "Ice Age," in the Nov. *Popular Science Monthly*.

We are asked, by letter, concerning books on grape culture. Col. Harashty's work seems to us the best for California.

A postal asks whether guavas will grow in Salinas City? Not out-of-doors. Of course they can be grown in a conservatory. But a slight frost kills them to the ground.

A correspondent writes to ask why Dr. Gibbons, formerly of Alameda County, can't give us some botanical facts from his wide knowledge and wide experience?

Will our contributors please try to get their articles in early for next month? The December number must be made up early, so as to admit of complete indexing. We are very anxious to have a satisfactory index to this year's work.

Mr. Pye, of Australia, states in a recent article that the Navel Orange is both a shy and a light bearer. The Riverside orange-growers, having planted largely of this variety, are anxious for further information on the subject.

Mrs. R. M. Austin, of Prattville, Plumas County, promises to give us a

description of her ascent of Mount Lassen, and of the curious and beautiful plants she found there. We have hopes of that for the December number.

A gentleman writes that he finds his strawberries better on a light loam. Moisture and manure are the great requisites. He has sixteen varieties growing and prefers Black Defiance for flavor, and Sharpless for size and productiveness.

Dr. Curl, of New Zealand, who is a member of the famed and historic Linnæan Society, writes us that last year he discovered no less than five hundred new species of plants, and the year before found nearly seven hundred. We congratulate him.

A friend of ours in Santa Barbara County made us a visit recently, and told us about his tuberoses. He has seven acres of tuberoses growing and blooming in fine condition. This would be very profitable if he were nearer to a market. Santa Barbara ought to have a narrow gauge railroad extending up the coast to San Francisco.

A Nordhoff, Cal., correspondent asks whether he had better plant chestnut trees, or plant the nut merely where the tree is desired. If the best varieties of chestnut are desired he must certainly plant trees; and as for nuts, even the ordinary Italian, they do not keep well, and seldom sprout easily. Those bought in the market usually fail to grow. We should prefer to plant trees.

A friend wrote from Watsonville, Pajaro Valley, in the last days of September, to tell us that Gloria Mundi Apples were nearly ripe, and that, when carefully picked, and put each one by itself in an airy loft, they would

keep until May. They will, he states, wrinkle somewhat and be unfit for sale, but they will cook better than a Yellow Newtown Pippin. This is a three years' experience, which sounds convincing.

Editorial Department.

LABOR AND LIVING.

The explorations which men have made on this planet only show us how complex and wonderful are its resources. Untilled, continent-like islands await the plow; new cities are to be founded beside savage rivers; new lines of commerce will be established, and year by year the great world will be brought into closer relationship. It is really a young world, an undeveloped world as yet; there ought to be work for every toiler.

The kinds of work are infinite in variety, and a person's character is somewhat revealed at first, and largely moulded afterwards, by the pursuit chosen. The best of occupations is that which most effectually develops a man's higher nature; but, on the other hand, some occupations are both vulgar and poisonous, as that of a slave-driver in *ante bellum* days. Labor, which is mere physical force, and needs constant supervision, is, notwithstanding the politicians, little more credit to a man than pulling a load is to a horse. A rude, undeveloped class of this sort of laborers is, under our system, a very positive danger. In just the degree that thought is mingled with their toil they are enfranchised from the animalism common to undeveloped intelligence. Read Burns' poem, "The Cotter's Saturday Night," and see how noble and pure the home of a workingman may be made, if only there is contentment, and faithful work, and simplicity therein.

The central fact of the universe, so

far as hitherto revealed, is that character is everywhere fundamental, and all-important. To have a few most faithful friends; to win the respect of neighbors and acquaintances; to live a clean, healthy, quiet, fruitful life; to leave, when earth fades, a place from which one is missed, a reverential memory in the hearts of men—this is, in its endless and perfect sense, a successful life. What a man has is nothing; it is temporary, extraneous, unworthy of envy: what a man is, meaning his habits, modes of thought, character, the look within his eyes, and his whole personality—this is of endless significance, of measureless dignity.

We have known men who wore the plainest of clothes, and toiled for the scantiest of wages, and never expected to do anything better, but yet they had gathered on their journey such truth, patience, and quaint, half-critical, entirely good-natured humor, that the dusty knowledge of books appeared very little in comparison.

To talk of the divinity of labor seems often a misleading term. If a man chooses, loves, and honors his labor it is for him a daily, divine creation—a daily glimpse of hopes and realities immeasurable. The man who pounds iron at the forge, with a hard and envious heart meanwhile, is, by his own choice, a serf and a slave. The man who, as he pounds iron, considers the nature of the material in which he works, and lets his imagination gather about the anvil-play, and the flying sparks, is child of the universe, is master of fate. To-day, to-morrow, and forever, the mood in which a man approaches his work, and the spirit in which he wrestles with it, are of the greatest possible importance. The mere thing he does is often enough superseded by later work; but his influence and enthusiasm remain, and his

very failures light the way for others.

Failures there must be in the life of any mortal, but those are the happiest who tread quiet ways, and win lasting friendships; who love the voices and revelations of infinite nature; who have more faith and old-fashioned reverence than the modern world thinks judicious. It is simply to live, saying what you believe, not anxious to seem consistent, thinking more of the thought than of the form, worshiping character and loyal manhood more than any marvel of genius. In that sort of living which is nearest the flower and crown of civilization, money plays a minor part.

THIS MONTH'S ILLUSTRATION.

This month we are pleased to lay before our readers a photographic view of the residence and grounds of Mr. A. K. P. Harmon, Oakland, Cal. The view is taken from Webster Street, looking east, towards the hills of the Coast Range, which form the background, and gives a glimpse of the larger conservatory, though the other plant houses are further back.

These are in every sense of the word well-kept grounds, there being a sufficient force employed to keep matters in good condition. The masses of fuchsias and similar plants grown here to a height of five or six feet, and in constant bloom, attract a visitor's earliest attention. On the north side of the house are beds of rhododendrons, and somerockerries and masses of shrubbery. Between the house and the main conservatory are some brilliant examples of carpet gardening. Next year this department will be enlarged. Further east are the bedded roses in long rows, not yet, however, being large enough to make any extensive display, but they embrace several hundred varieties. In January we shall present a view of the

interior of Mr. Harmon's large conservatory. The picture is already taken, and we think it is a charming glimpse of a very delightful place, and one of Watkins' best photographs.

FOOTHILL FRUIT.

On the first of October Mr. Honcharencho sent a box of fruit to this office, which deserves mention. The box contained very large Bartlett's and Seckle pears, also some unusually highly colored Yellow Bellflower apples. They were grown on Mr. H.'s little mountain farm, southeast of Haywards, Alameda County, in the foothills. We happen to know a good deal about the locality, and the difficulties under which Mr. H. has labored, and we consider his example a worthy one to follow, and also worth putting into print for the benefit of others. Mr. H. is of Russian birth, but received much of his early education in Greece. He is a fine linguist, and an enthusiastic antiquarian. He founded a Russian journal in San Francisco some years ago, devoting much of its space to articles on the resources and development of Alaska, but he was a prophet before his time, for the subject failed to awaken that attention which it really deserved. Mr. H., after suspending the publication of his journal, went to these neglected hills of the Coast Range and settled on a few acres, which had been merely used as part of an immense cattle range. We are not sure whether it was actually government land, or bought from other parties, but the first cost was extremely low. There are five or six acres of soil on the hilltop, moist the whole season, and rich enough to produce any kind of fruit or vegetable. Here Mr. H. and his wife have lived comfortably ever since. The climate is delicious, and the view is magnificent, extending

over the wide Santa Clara Valley, towards the west, and over hill and crag to the blue peak of Monte Diablo north. Mr. H. writes that there is no frost at any season; that his fruit trees do exceedingly well, although he was told by fruit men of the valley, that they would not succeed on the hills; and that there is room for many more small homes of the same sort in that region. We shall, some day soon, ride over and examine the capabilities of that section. It is certain that the fruit Mr. H. sent to this office was highly colored and very choice. Its lateness is a strong point. The only Bartlett's in market on the first of October, were a few from Placer and El Dorado, and they brought a high price. We speak of this because we believe that portions of the hill regions of Alameda County are well worth the attention of home-seekers, and will, at no distant day, be dotted with energetic communities, raising grapes and other fruits and early vegetables. This summer, in some of the mountain counties of California, we have seen marvels in the way of patient industry, and the utilizing, by means of reservoirs, the total rainfall, and flow of springs and streams. There is room for the same kind of enterprise in the hills of Alameda County.

THE BEAUTY OF SUGGESTIVENESS.

One of the gladdest things about life and living is the simplicity, and yet the infinite suggestiveness of whatever, in either nature or art, has power to give us delight. Sometimes it is some rich, long known, yet indescribable color in the sunset, or in the glowing east which delights us—some hint of white trembling into rose, of rose melting into crimson, of crimson purple-barred, of purple flecked with opalescent gold, of jacinth and beryl hues lying against

pale amethyst, or clear azure, with a thread of emerald between. Or perhaps it is the midnight wind, fragrant with its journeyings through unmeasured space, which makes us for a moment children again, before the days of grief and toil, lying close under the garret roof, with just such a wind trembling over face and hair, and the large, bright stars shining through the splintered roof, with a sweet sense of companionship. (Alas for those who ever outgrow their love for stars or flowers, for birds, or for children.) Or it is the gray, fierce ocean, with its currents and perpetual motion; its harp-sounds, falters, deep clamor; its angry, pitiful, restlessness, which is nature's living tragedy, and suggests more than it ever plainly tells, having always, faint and suggestive, that pale and endless horizon, that silent line which melts into silence, even as a living dream. We must not forget; whatever we love most, and whatever most keeps us, does so because of its suggestiveness.

Sweetest of all sad things are the blossoms of our childish days—the flowers that will never be quite the same again, yet are always dear. What of the rose-tipped daisies, the wild yellow violets, the large pink roses clambering over the mossy fences, the May-flowers in the wood, the swaying lilies on the pond? These are the memories of our fathers. For us, on this fair and hopeful coast, there shall be other treasured blossoms—the gold-cups of spring and autumn (*Eschscholtzias*), the mottled *Mariposas* (*Calochortuses*), the azure-hued *Nemophilas*, and many others which the children gather in field and wood, but which few as yet sufficiently love and admire.

The suggestiveness, the mingled memory and hope which we require in that which moves us in nature, is a part of

all beauty. Nothing greatly delights us unless it gives us a glimpse of wider thought. The rarest quality of art and literature is suggestiveness. One noble statue may have more of love, faith, patience, and courage than a written volume; a line of true poetry may ring louder than the bells of many steeples; a dash of Turner's color, interpreted with the eyes of Ruskin, gathers the wide life of a nation into a few feet of canvas.

When we say, as we sometimes do, that art is higher than nature, we mean to express the feeling that art takes only the best of nature, and finds, as nearly as may be, subtle, hidden elements, new meanings and wonderful sympathies, only partly told, yet none the less real.

The healthy mind seizes upon and uses these many hints of earth and air, of nature and of art. It gathers, by its own spiritual alchemy, a new force, and lays up strength for days of need. It finds that this is a world of types, a world of hope, and of endless suggestiveness. Nothing need ever seem without meaning; our simple, sober lives are full of hints and glimpses. Let us look, and think, and listen, being glad with each new revelation of hidden beauty and ceaseless power.

THE DECEMBER HORTICULTURIST.—The December number will contain one of Dr. Gally's best articles; a vivid description, by John Taylor, of a home in Tuolumne County; some criticisms on roads and lawns, by W. A. Pryal; another very readable letter from New Zealand, etc. Also greenhouse, garden, and orchard notes, and a prospectus of our proposed work for 1880.

A Centreville fruit-grower raised a Swaar apple this year which measured 13½ inches around.

Editorial Notes.

CONSERVATORY NOTES AT MR. HARMON'S.—During a recent visit to the grounds of Mr. A. K. P. Harmon, Oakland, we noticed that in the stove-house there are now some large plants of *Nepenthes rubra*, whose tiny lidded and mottled drinking-horns curve upward from the tip of each large and drooping leaf. Some choice *Crotons*, *Euphorbias*, *Ixoras* plants of *Aphelandra fascinator*, *Gloxinias*, whose day of bloom is nearly done, double *Poinsettias* and *Orchids*, not yet in bloom, massed with *Cape Jasmine*, vines, and *Caladiums* form a pleasing group. Worthy of mention is also another *Nepenthes*, the *N. Kafflesiana*, whose large cup of green, marbled with brown, lid arched and lifted above, and shield-like wings at the side of the cup, are reminders of dim, tropical jungles. Among the many *Selaginellas* on the floor here, we observed *S. Japonica*, as distinct in habit of growth.

In what might be termed the foliage-house, so full is it at present with *Coleuses*, *Rex Begonias*, and *Dracænas*, we could not but be pleased with *Cypripedium Sedeni*, now in bloom. Its purplish red, boat-like blossoms, thrown well above the narrow leaves, are admirable. Some of the heads of *Cockscomb* here were evidently of the best strain, displaying a marvelous regularity, almost equal to a catalogue picture thereof.

The third house visited, that which is devoted to *Camellias*, shows much growth during the past summer, and the best of treatment. Better shaped, healthier plants we never expect to see. They are planted in a raised bed of well prepared soil, down the centre of the house, and the side benches are occupied with newer *fuchsias* and many blooming plants. The *Camellias* in the house are just beginning to bloom, and there are others in pots out doors, under lath shelters, to bring into the house later. The *Azaleas* of the best named varieties also occupy this house, and they are, without exception, the best grown plants we have seen. We measured on a plant of *Marquis of Lorne*, in an eighteen-inch pot, growths of six and nine inches, and numbers of others were nearly as fine. We noticed about twenty varieties of *Azaleas*.

The largest conservatory is built like a crystal palace, having a dome which the tallest of bananas would consider too much of a height to attain, and four wings, two cut off by doors and devoted to grapes, while the other two are also under the reign of the large and stately plants which properly belong to a conservatory. From the west door one looks across a profusion of leaf and flower such as would be admirable in any part of the world. In the centre, under the dome, is a fountain basin, with an aquarium on a pedestal above it containing gold fish, and circled about by ferns in pots on tiny stands. Above this jets of water spurt and twinkle over a crystal globe, and a circle of tree ferns of different

species rise high enough to overlook and overshadow the whole. The largest plants here are bedded out, and potted plants, for temporary effect, are set among them. Antheaon Geanton (a name not in anywise musical) next attracted our attention. It is a fine massive foliage plant, whose roots have the peculiar habit of covering the surface of the tub in a close mat. Notes on a number of choice and rare plants in this conservatory are delayed until another month.

EUCALYPTI.—The government of Western Australia has placed at the disposal of Baron Von Mueller funds sufficient for the publication of forty lithographic plates of species of eucalypti peculiar to that colony. They are moved to do this by the expectation of great profit to be gained by the colony from the various products to be derived from these trees when their value shall be fully made known.

VAINQUER DE PUEBLA FUCHSIAS FOR BEDDING.—After some observation of the habit of various kinds of fuchsias grown by our florists, we have come to the conclusion that there is none a better bedder than the variety we mention. Its color, as is well known, is a bluish white, stained with red; the flower is large, and a good double, and the masses of bloom of which it is capable, when grown in rich soil, are extraordinary. We have seen specimens of this variety which stood ten feet high, and were eight feet in diameter at the base, growing not as wall plants, but in pyramidal form. The charm of growth and color which such a plant possesses is absolutely indescribable. All summer long it is a mound of emerald and rose-streaked snow. The darker fuchsias are very nice, but we have made our choice for the present.

ANOTHER ORANGE INSECT.—Our Florida friends, according to the *Florida Agriculturist*, have found a new insect on their orange trees. It is called the Orange Tree Psocus (*Psocus citricola*, n. sp.) The eggs are laid in oval masses on the leaf, and are protected by a sooty web. The young, when first hatched, are very active, white, and aphid-like, and are thought to live upon the young scale insects. The mature specimens have four wings, the front pair being the longest; color of body, pale yellow, head large, antennæ three-jointed. Has anyone in California observed this insect, and what are its habits here? An insect which preys on the scale bug were worth importing.

FISH GUANO.—There are many farms and gardens along the coast of California, and on our larger rivers, which would be much benefited by a proper use of the natural treasures of the water. Near the seashore there are sea weeds, which, if dried and burned, produce an ash which contains the most valuable fertilizing properties. Then, also, and of course the most abundant source of supply, will be from the fish and other forms of marine life which are flung on

the shore after a storm. Wherever, also, there is a salmon cannery on the Sacramento some one ought to utilize the refuse. The *Quebec Journal of Agriculture* states that fish and fish refuse should not be used fresh, as, by reason of the contained oil, it hardens the soil, but should be heaped up and composted with dry earth, muck, stable manure, and whatever else is worth hauling on the land. After a year or two of decay such composts give the best of results, and are worthy the attention of our coast farmers.

FLOWERS IN THE SCHOOL-ROOM.—We recently visited a school-room in Alameda County where there were blossoming vines of *Maurandya* in pots by the windows, together with yellow and scarlet *Tropæolums* and boxes of Pansies, while two hanging baskets of *Lobelias* and *Coleus* made the room look much more pleasant than the average school-room. It was confided to us in strict confidence that the total cost of this flower display was twenty cents for pansy and lobelia seed. The rest of the plants were raised from cuttings, and the baskets were home-made.

TREES IN THE SCHOOL YARD.—It would be a great blessing if every Board of Trustees in the State could be persuaded to plant out a number of trees in the school grounds under their charge. We have seen school yards which were absolutely mournful, so desolate they were. Now is the time to begin preparations. Take around a subscription paper and it will not take long to raise money for the purpose. Do not plant many evergreen trees. Deciduous trees are much the best for school purposes. We think that the California Black Walnut has no superior as a shade tree, and it will grow in almost any soil. Ash, Maple, Cork-bark, and other Elms, a Weeping Willow by the well, and a Cypress hedge, instead of a fence, are things we should like to see. The actual cost of planting a school yard full of trees will be slight, for any reputable nursery man would make special rates for such a purpose. We hope our friends will urge this matter.

A BULB-COLLECTING PEDAGOGUE.—Last week business and pleasure combined to take us on a tour of four days. We—this is not the indefinite editorial "we," but actually means two—we, having mounted a couple of sleepy mustangs, rode south, down the long San Jose Valley, past Milpitas, San Jose, the blue Almaden peaks, past villages and farm houses, over sun-lit slopes and through shadowy ravines, across lovely Pajaro Valley, with its winding river, and by and by into the San Miguel hills on the Natividad road. Here in the Carneros Cañon we found one of the self-taught, progressive, wide awake students of our State, J. B. Hickman, of San Juan. Carneros is a twisted up junction of three ravines. It used to be a noted Spanish rendezvous in days of old, and has, all in all, a queer, quaint,

and somewhat varied population. There is a pigmy school-house by the roadside, and here for many successive years Mr. Hickman has made the ways of knowledge pleasant for the children. His vacations and Saturdays are spent in botanizing, or in cultivating his farm, which comprises a great variety of surface and of soil, and will in time become a wonderfully beautiful home. Just at present his main business, outside of school hours, is to gather and arrange the native bulbs which grow abundantly in that vicinity, and they are handled with the utmost care. Mr. Hickman informs us that he has found, and is now propagating, a variegated *Tritelia laxa*. He wishes bulb correspondence with botanists over the State.

CLADRASTIS TINCTORIA (Yellow Wood).—This beautiful, but seldom seen, tree is illustrated in both flowers and fruit by the *Rural New Yorker*. It belongs to the Leguminous family, like the Locust, Wisteria, Red-bud, Kentucky Coffee Tree, etc. It is a native of the Southern States, but is quite hardy northward to the lakes. It is a rapid grower, and always attracts attention from its clean and graceful foliage and its lovely white trusses of flowers. We speak of it now because we consider it one of the choicest trees for a lawn, and the tree planting season is near at hand. It is possible that no nurseryman in the State has any stock of the Yellow Wood, as during our rather extended visits we have never observed it; but we hope they will procure and disseminate this very charming tree.

THE SYDNEY AND MELBOURNE EXHIBITIONS.—Great interest ought to be felt in the coming exhibitions of these two leading cities of Australia, and it is possible that many Californians will visit them. Australia is a progressive country whose resources are every year becoming better known. Besides gold, the various provinces export in large quantity wool, hides, tallow, mimosa bark, various drugs, wines and champagnes, fruits of various sorts, and many semi-tropical products. Our Australian exchanges show a constant growth in farming and horticultural interests.

THE LADY BIRDS (Coccinellidæ).—These are among the best friends of the gardener. There is hardly another family of the insect tribe which is better known than these, the last division of the order coleoptera. There are over one thousand species known, but they have a strong family likeness, so that it is often difficult to distinguish between them. The general shape of lady birds is like a half pea—flat beneath and convex above. Most of them are gaily ornamented with red, white, yellow, or black colors, arranged in bands or spots. The eggs are long, oval, and yellow, and are laid in patches, often in a group of plant lice, which the larvæ as soon as hatched devour. The lady birds are the natural enemies of the aphidæ, or plant lice, of the chinch bug,

of the Colorado potato beetle, and of many injurious insects. Of all the insects upon which they subsist the aphidæ are the most dangerous enemies of the florist and gardener. Many of our fruit trees and flowering plants are sometimes seriously injured by these pests. The apple trees suffer from aphidæ mali on the leaves and *eriosoma pyri* on the roots; the cabbages have aphidæ brassica; and there is a hop aphidæ which has often ruined crops in England and Canada. One celebrated entomologist computes that from one egg only of the aphidæ there would be produced in seven generations, taking thirty as the average of each brood, the enormous number of seven hundred and twenty-nine millions, so that if all were permitted to live everything on the face of the earth would in a short time be covered with them. We desire to call the attention of our readers to these facts, hoping that they will always be firm friends of all the Coccinellidæ.

THE CUZCO CORN.—This summer, when at the State University grounds, we saw several plants of the new Cuzco Corn, which has been the subject of so much comment lately among our farmers and horticulturists. The size and substance of the stalks is wonderful, and they have a very peculiar way of anchoring themselves to the ground by means of side roots thrown out from the joints near the surface. The color, size, and quality of the grains of corn is remarkable, and it promises to be an acquisition to the State. The seed has been almost impossible to obtain, but Mr. Tiburcio Parrott, of this city, has at last succeeded in getting 1,500 pounds of this famous corn. This is the corn used by the Peruvians in preparing their tortillas.

Elsewhere there will be found an advertisement from Mr. Howatt, our correspondent from Placerville, who wishes to change his location. M. Howatt is an honest capable man who has had a very wide experience in nursery work, and in the charge of green-houses, and we hope he can be kept on this coast.

THE STATE HORTICULTURAL SOCIETY—The second meeting of this new and promising institution was held at the rooms of the Academy of Science, last Saturday afternoon, Oct. 25th. There was an attendance of forty-one, embracing some of the best known and most enterprising horticulturists of the State. Mr. John Lewellyn took the Chair, and Mr. Shinn the Secretary's desk. The Committee on Organization reported a Constitution, which was, after considerable discussion, adopted clause by clause, was signed by nineteen of those present, who paid their fees, and became full charter members. The Constitution provides for regular members who pay an initiation fee of \$2 50, and monthly dues of fifty cents; and also for honorary or corresponding members, who are not expected to pay anything. A committee was appointed to nominate officers and a Board of Directors, which committee reported, but,

owing to a further discussion of points in the Constitution, the committee's report was laid on the table, and a special meeting was called for Thursday, Oct. 30th, for election of officers and further organization.

Mr. Wickson exhibited some apples of the new Matteson Seedling from Grass Valley. Mr. Murphy showed samples of a couple of the best *Solanums* we have seen—*S. Japonicum* and *S. ciliatum*—both fine ornamental shrubs, choice for garden ornamentation, and deserve a hearty compliment, though their thorny and ferocious leaves are better to look at than to touch. Mr. Murphy also exhibited a lovely leaf of *Adiantum gracilissimum*—a fine, feathery fern of recent introduction on this coast.

Pomological Notes.

ORANGES AND OLIVES IN OAKLAND.—This city is not behind in tropical plants, for in many of her gardens may be seen semi-tropical as well as tropical vegetation. We have watched with interest for the past five or six years the growth and developments of some orange and olive trees at St. Joseph's Academy, 5th and Madison streets. These were planted by the late lamented J. Ross Browne, when the place was the family home. Two orange trees, one on each side of the main entrance to the academy, are now over fifteen feet in height, and are now bearing large fruit. An olive tree is also about the same height, and is yielding fruit. On the corner of 8th and Jefferson streets an orange tree of about six feet high is completely loaded with the yellow fruit.
—W. A. P.

THE LE CONTE PEAR.—This is a pear which seems to be attracting some attention, especially at the South. From an article in the *Southern Farmer's Monthly* we learn that its origin is not known, but that it is understood to be an accidental seedling and probably a cross between the old worthless Chinese sand pear and some good variety. It is said to retain the vigor and fruitfulness of the Chinese, with the juicy excellence of the other. The parent tree is in Liberty County, Georgia, and has been known to produce thirty-nine bushels in a single season. It has no off season, and is not subject to blight or any disease. Fruit is bell-shaped, rich creamy yellow when ripe; ripens in July.

STRAWBERRY SALES.—W. C. Barry, in the *Country Gentleman*, gives some facts about the sales of strawberries in Cleveland and Rochester. In Cleveland the sales have been as much as 2,000 bushels a day. In Rochester one grocer sold 4,000 quarts in a single day. After reading these statements, the remarks of Mr. Matthew Crawford, of Cuyahoga Falls, at the meeting of the Portage County Horticultural Society, seem appropriate. He remarks: "The strawberry seems to be gradually changing ground from a luxury to a necessity. Sup-

ply and demand seem to be engaged in a race, and in their endeavor to outstrip each other both have increased to an almost incredible extent."

A PINK FLESH APPLE.—Mr. Albert Matteson, of Grass Valley, according to the *Foothill Tidings*, has a seedling apple like a Bellflower in outside appearance, but the flesh is of a beautiful rose pink, striped with yellow. It is of a fair size and pleasantly tart.

BANANAS.—The chief feature of some portions of our markets at present are the fairly immense bunches of imported bananas. They come from the Isthmus, and, arriving here in a rather green state, are hung up to roof and wall so that they may ripen slowly. The trade is almost entirely in the hands of a few Italian firms, who, by combinations among themselves, keep the price up to rather exorbitant rates. We have an idea that some of the railroad enterprises of the future will considerably astonish the importers of tropical fruits, not only here, but also in Eastern and European cities. When San Francisco has direct railroad communication with the city of Mexico, for instance, and even with the States of Central America; when the fertile table lands of Africa are enabled to send their products by rail to the Mediterranean; when the tropical fruits of farther India are poured into Europe by some trans-Asiatic railroad of the future, then we fancy there will not be much planting of dwarf bananas in regions but partially adapted to their growth.

But for years to come a most interesting field of experiment both here and in Florida will, we think, be found in the growth of the dwarf and hardier bananas. We think that sufficient fruit will before long come into our markets to considerably reduce the present prices. As regards the quality of the fruit of the Cavendish variety, grown in this State, we can not at present feel certain. The specimens which we have tested were unfortunately exposed to the severe weather of last winter. They look well, forming fine heavy bunches, but the flavor is not as good as its friends have claimed. Another season must settle this question, and we hope satisfactorily.

NAMES OF PRUNES.—A correspondent asks us to give some definite information concerning the several varieties of the prune, and to fix the proper nomenclature. As to nomenclature, there is perhaps no fixed and acknowledged standard. Some varieties are known by one name in one locality, and by another elsewhere. The "Hungarian" Prune is the "English Pond Seedling" of some. The "Burgundy" is the "French Prune" of some, and the "Prune D'Agen Petite" of others, and so on. Several of our most popular and valuable prunes are called "German Prunes." As most of our prunes have a German or Belgian origin, it is but natural that whatever may be the technical name by which they may be designated, they may all be called German Prunes. We think, however, it may be safely

said that our nurserymen generally affix the same names to the same varieties. Hungarian, Fellenberg, Prince Englebert, German Prune, French, or Petite Prune D'Agen, Italian, Early Summer Prune, etc.

QUEENSLAND EXHIBITION.—At the Fourth Annual Exhibition of the Queensland National Association, held last July, prizes were bestowed upon various persons for the following varieties of fruit, viz: Bananas, Pineapples, Oranges, Lemons, Cumquats, Limes, and Citrons, which shows that they are successfully introducing a great variety of fruit.

THE ALLISON SEEDLING AGAIN.—Our friend, Mr. Lewis, of Grass Valley, sends us a couple of the red-fleshed seedling apples mentioned elsewhere. They are medium-sized, and quite sour; are very beautiful when cut open, and worth propagating. Mr. Lewis is editor and proprietor of the *Foothill Tidings*.

New & Desirable Plants.

[We shall glean from our exchanges and correspondence, notes of plants either new, or of promise in our climate. Our nurserymen are invited to send notes on any interesting plants received.]

MACKAYA BELLA.—The *Garden* for August 16th has a beautiful colored plate representing the flowers of this shrub. They are trumpet-shaped, with spreading, fine parted lip of a very pleasing lilac purple, with dark veining of the same color. The *Mackaya Bella* is a shrub, a native of Natal. We have been told that a gentleman in this city has one, which, however, has never bloomed.

CONANDRON RAMONDIODES.—At the meeting of the Royal Horticultural Society, London, August 12th, a botanical certificate was awarded to the above plant. It is a native of Japan, has a tuft of thick, fleshy, oblong, green leaves, from four to five inches long, from which arise the flower-stems, about six inches high. These are erect, much branched, the upper half bearing several flowers which measure nearly one inch across, and have fine points slightly reflexed. In color they are a rich lilac purple, the centre being chocolate and the stamens yellow.—*The Garden*.

MONTBRETIA POTSIIL.—This is a hardy bulbous plant nearly allied to the gladiolus. The color is a bright orange.

GLADIOLI.—We give the names of some of the new varieties of this bulb: Jessica, rosy color; Samuel Jennings, bright scarlet, with under segment white; A. F. Barron, deep rich salmon tint; T. S. Ware, intense scarlet; Egyptian King, deep rich plum color; Duke of Connaught, brilliant crimson. These are new seedlings exhibited in London, the description of which we take from the *Garden*.

NEW DAFFODILS.—Some of the new daffodils are so very beautiful that they deserve mention under this head. There is a pale straw color, with deep yellow cup; white, with yellow cup; deep yellow, with deep yellow cup; all white; and white with red cup. We give the names of these varieties in the same order that we have given the descriptions: Exquisite, Nelsoni, Ajax volutus, Humei argentus, Nelsoni argentius. We have been accustomed to call these daffodils—in the descriptions in the *Garden*—Narcissus.

KARATAS HUMILIS.—A writer in the *Garden* speaks of this new Bromeliad, which was first described in 1781, and though figured no less than sixteen times since, has never been satisfactorily reproduced until the *Garden's* present plate. Before it blooms the central leaves assume a brilliant vermilion color, and this vivid color appears every year at the same season, whether the plant blossoms or not. The plant looks like an enormous vegetable spider.

Reviews and Exchanges.

[All books on subjects in any way connected with horticulture will be reviewed in this department. Publishers are requested to state the price of each book sent.]

VEGETARIANISM THE RADICAL CURE FOR INTemperance. By Harriet P. Fowler. W. L. Holbrook & Co., New York. Price, \$1.

This is a neatly printed brochure of seventy-eight pages and six chapters. It states in a plain forcible way the advantages of a vegetable diet in assisting a person to conquer his inflamed desires for liquor, and it answers the leading objections to such a diet. Liebig's "Animal Chemistry" stated many years ago that most persons find that they can take wine if at the same time they use animal food, but not with farinaceous or amylaceous food. This was the beginning of considerable discussion. At a later date Napier read a paper before the British Association, in which he analyzed twenty-seven cases in which he had successfully applied the vegetarian system in the cure of intemperance. Others since have experimented in the same general direction. The fundamental ideas of this work are that meat lacks carbonaceous properties, which alcoholic drinks partly supply through their saccharine qualities; that a meat diet unduly stimulates the nervous system; that it perpetuates intemperance by increasing gastritis (inflammation of the stomach), and so increasing thirst; and that other articles of food are as nutritious as meat. In reference to the last point, tables are given in which there is a comparison of the composition of meat with that of beans, peas, lentils, cocoa, chocolate, eggs, cheese, oatmeal, fish, macaroni, unbolted wheatmeal, Indian corn, vegetables, potatoes, and fruit. These tables are worth careful study. The last chapter is intend-

ed more particularly for the mothers of the family, and is directed against the pie, cake, and hot biscuit business. As a whole, this is the most sensible vegetarian book we have met with. It does not demand too much; it makes no extravagant statements; and it is evidently written in the interests of good morals, clear brains, and healthy bodies.

HAND-BOOK OF PRACTICAL LANDSCAPE GARDENING. By F. R. Elliot. D. M. Dewey, Rochester. Price, \$1.50.

We have known this book for some time, but a copy recently sent from the publishers deserves notice. It is a work from which many good practical hints may be gleaned if one knows how to choose. Some of the plans for suburban grounds are very judiciously arranged. The main difficulty—not peculiar to this work, but also pertaining in a greater or lesser degree to all works of Eastern or European writers—is that much which seems to them worth saying for their respective regions is of little use on this coast; and many of the lists of plants, shrubs, and trees which they make, need the most careful revision to adapt them to the wants of Californians. If any one on this coast should wish to use the carefully prepared tables of this volume in laying out grounds, they will do well to consult a reliable nurseryman, who can point out some needed changes. We wish, notwithstanding its lack of entire adaptability, that it could be studied by all who are thinking of laying out grounds.

CATALOGUE OF THE DAVENPORT "HERBARIUM" OF NORTH AMERICAN FERNS. Massachusetts Horticultural Society, Boston. Published by the author, Geo. E. Davenport, Medford, Mass. Price, 50 cents.

The Davenport "Herbarium" has long been known as a most valuable collection of ferns, in some respects unique, and a model in its system. This so-called catalogue is full of information; it is not dry or dull, to a plant-lover at least; it includes notes on localities and doubtful forms, and is an indispensable part of the library of each pteridologist (that's what we call a fern student). Mr. Davenport has kindly made brief notes of the latest fern matters on the margin of the copy sent us, and in a private letter he says further: "Since publishing the catalogue I have added nearly 200 sheets of specimens of ferns to the herbarium, and the greater number of species are now represented by copious specimens from all parts of the country, showing the fern in all of its forms and stages of growth. The catalogue, as printed, recognizes 142 species of North American ferns, but the verification of the presence of *Pellaea ternstrofia* in Texas, the recognition of *Aspidium Floridanum* as a species, by Prof. Eaton, and the discovery of a new aspidium, have increased the number to 145 North American species, as recognized by my catalogue."

CATALOGUE OF PHENOGAMOUS AND VASCULAR CRYPTOGAMOUS PLANTS, collected in Dakota

and Montana, by Dr. Elliot Coues, U. S. A., and catalogued by Prof. J. W. Chickering. Author's edition, Washington.

During the summer of 1873 Dr. Elliot Coues was connected with the United States Northern Boundary Commission, and he made extensive collections along the 49th parallel, in the valleys of the Red River of the North, and of the Souris River. The summer of 1874 was spent in the northern parts of Montana and in the Rocky Mountains. The species collected by Prof. Dawson, of the British Contingent of the Boundary Survey, have been incorporated into the catalogue (being duly credited), so that the list is now a fair view of the flora of that belt of country. The catalogue comprises 692 species, besides some varieties. About 390 species are found in the Middle and New England States; 80 species are distinctly Western; 215 species belong to the plains and Rocky Mountains. It is a reprint from Volume 4 of the United States Geological and Geographical Survey under Prof. Hayden's charge, and we are indebted to the kindness of the author, Prof. Chickering, for our copy.

CONCERNING A FEW COMMON PLANTS. By George L. Goodale. Published by the Boston Society of Natural History.

This is one of the "guides for scientific teaching," and ought to be on the desk of every teacher in the land. It is full of wise suggestions; it is based upon the true method of teaching the natural sciences; it develops thought, and looks toward better things, and this we say after a careful reading of every page. Those who have found it hard to teach botany to small children should thoroughly imbue themselves with the spirit and methods of Prof. Goodale's "Guide." We are shown how seeds and seedlings may be used; we are told how the parts of a flowering plant help each other; about roots and their work; the relations of plants to the soil; food held in reserve; plant growth; the flower, leaf, fruit, and seed; and about movements and parasitism. Last winter Prof. Goodale gave six botanical lectures on Saturday afternoons, which were attended by 500 teachers, who were deeply interested in the methods used.

THE CLIMATE, BOTANY, GEOLOGY, AND HEALTH OF SANTA CRUZ AND VICINITY. By C. L. Anderson, M. D. San Francisco: W. W. Elliot & Co., 106 Leidesdorff Street.

Elliot & Co. are publishing an illustrated history of Santa Cruz County, and Dr. Anderson prepared this article for use in that work. This is the author's edition, an elegant eight page quarto, with maps, and we hope will be largely used by the people of Santa Cruz County to mail to Eastern friends. It gives in brief compass a glimpse of the resources of that county—one of the most hopeful regions of the State—and it is full of a love and knowledge of Nature. The first map illustrates the wind elements of the Pacific Coast, and the second shows an ideal section of the Santa Cruz Mountains. Both were

prepared by Dr. Anderson. We regret that we have not been informed with regard to the mailing price of the work, for it will doubtless be in demand.

BOTANICAL DIRECTORY FOR AMERICA, 1878.—The Torrey Botanical Club of New York have been doing a great favor to botanists by their occasional directories. The present one is a 16 page 12 mo. pamphlet, double columns, fine print, and gives the addresses of nearly all the people on the continent who are interested in botanical pursuits. Our own coast is well represented, and that is encouraging. We hope that a new edition will be issued this year. Persons desiring a copy of this valuable directory must send forty cents to Wm. H. Leggett, No. 54 East 81st Street, New York, who edits all the Torrey Club publications.

A TIGHT SQUEEZE, OR THE ADVENTURES OF A GENTLEMAN, who, on a wager of ten thousand dollars, undertook to go from New York to New Orleans in three weeks, without money, as a professional tramp. Boston: Lee & Shepard, Publishers.

We have given the title in full, because it is a key to the character of the book. A person who tries to tramp his way from New York to New Orleans in three weeks (having had no previous experience of that peculiar business), must needs pass through some unpleasant adventures, and for the time being at least become demoralized in looks and apparel. This book gives many glimpses of the ways and byways of the modern tramp, and is, on that account, worth reading. The style is curiously similar to that of Oliver Optic, and the feminine romance interwoven with the hero's adventures belongs to the same somewhat dramatic and highly improbable school.

MR. PHILLIP'S GOVERNESS, THE STORY OF A WEDDED LOVE. By James M. Bailey. Boston: Lee & Shepard.

We do not like the leading title of this book, for it is based on a subordinate character, and does not give any clear view of either *motif* or plot. But then titles are so difficult to manage anyway that this as a lesser weakness may well be forgiven. The "Danbury Newsman" appeared for a time to have dropped out of the book-making business, but he comes to the surface again with this tale of a country editor and his wedded experiences. Some of the chapters read as if they might be "owre true" to be funny, and, as the author says in the preface, it "finds a cruel emphasis all about us in homes where the toils and worries of business make men forgetful, and wives impatient, and life so much less than it might be." The descriptions of the office of the *Gallowhill Gazette*, and of the muss and entanglements of publication day, are among the best points of the book, and the feminine elements are well managed.

THE FLORAL GAZETTE.—Parks' Floral Gazette states that the engraving of the Calochortus, which we gave in our August number, was first drawn and engraved for that journal, and that credit should be given to it instead of the *Rural Press*. This matter lies entirely between the *Floral Gazette* and the *Rural Press*. We received the block used from Dewey & Co., giving them full credit, and understanding that it was original with them. We always try to give credit wherever it belongs.

DISEASES OF SWINE. Special report of Department of Agriculture; 292 pages, finely illustrated with colored plates and engravings. Washington: Government Printing Office.

This will receive attention next month.

CHILD CULTURE. By Prof. E. S. Carr; 22 pages. E Steiger, New York.

STATISTICAL ABSTRACT OF THE UNITED STATES, 1878. Government Printing Office, Washington.

REPORT OF CONDITION OF CROPS FOR SEPTEMBER. Agricultural Department, Washington.

A PRIMER OF AMERICAN LITERATURE. By C. F. Richardson. Boston: Houghton, Osgood & Co.

Catalogues, etc., Received.

[We shall acknowledge the receipt of all Seed or Plant Catalogues, Pamphlets, Reports of Horticultural Societies, Agricultural Reports and similar documents.]

Classified Catalogue of Fruit Plates and Nurserymen's Requisites. D. M. Dewey, Rochester, N. Y. This contains lists of colored pictures and photographs of over 2,400 varieties of popular fruits, flowers, trees, shrubs, etc., intended for use by nurserymen and their agents. The publisher also sends us some twenty specimen plates, which can be seen at our San Francisco office. They are the best fruit plates we have yet seen—a little too highly colored, perhaps, but then that is a failing of most fruit pictures.

Catalogue of the Monmouth Nurseries. Small fruits a specialty. T. T. Lovett, Little Silver, Monmouth County, N. J.

Leeds & Co., Cascade Rose Nursery and Greenhouses, Richmond, Indiana.

Bott & Hammersly. Pottery. Richmond, Indiana.

Arlington Nurseries, Jacksonville, Florida; Albert I. Bidwell, proprietor.

Randolph Peters, Wilmington, Delaware. Trade List for Fall of 1879 and Spring of 1880.

Wholesale Trade List of Heike's St. Louis Nurseries, St. Louis, Mo. Office, 1,522 Papin Street.

H. W. Williams & Sons, Batavia, Kane County, Ill. Trade Catalogue for Fall of 1879.

Circular. Summer Course in Phænogamic Botany. Harvard University, Cambridge, Mass.

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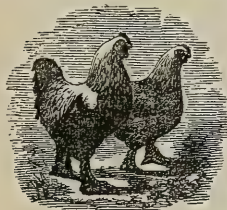
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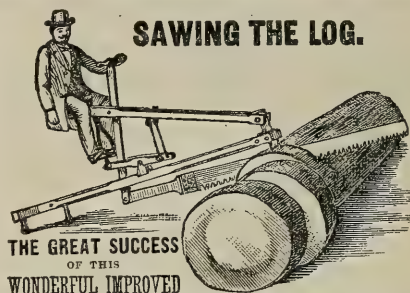
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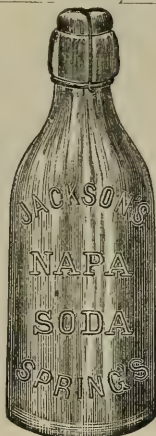
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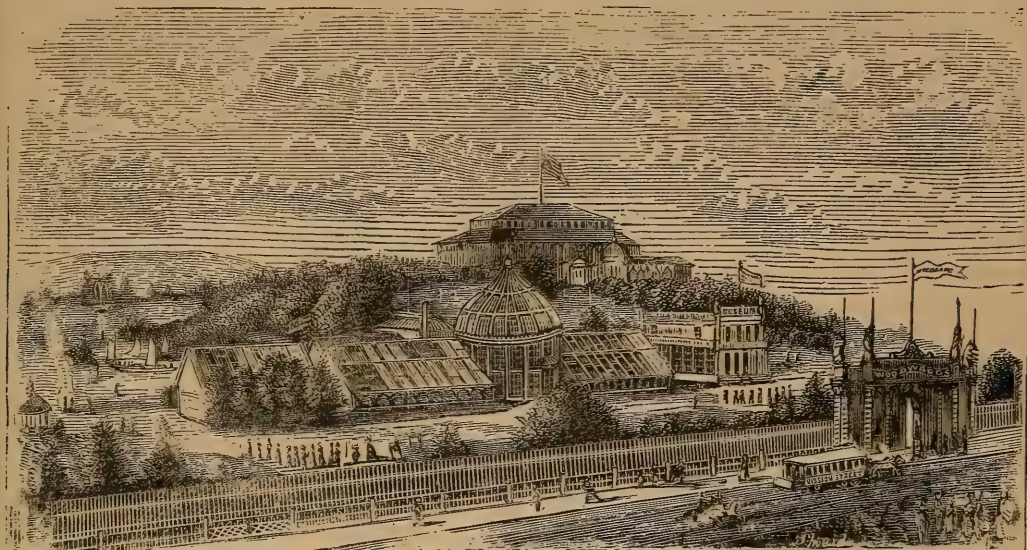
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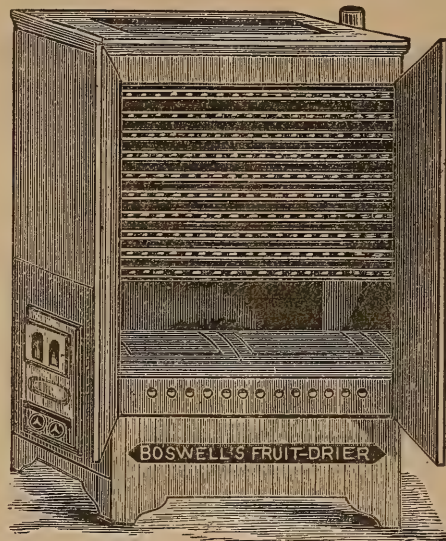
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THE



California Horticulturist

AND

Floral Magazine.

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CHARLES H. SHINN, - - EDITOR.

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Six Hundred Original Articles and Notes

adapted to our climate, besides copious extracts from the best exchanges, and also reviews of books, etc. We have developed correspondents in New Zealand, Australia, and Mexico, as also in many out of the way places on this Coast.

We hope to do still better for the future. Our arrangements for illustrations promise to be very satisfactory, and our contributors are all enthusiastic. We hope to make the volume for 1880 better than that for 1879—a great deal better, in fact. All our old contributors will continue, and we shall have several new ones to be announced hereafter.

In view of the work we have done, and the need of this journal, we urge upon our subscribers and friends the necessity of helping us to advance. Get up clubs; call the attention of friends to the HORTICULTURIST. If each one of our present subscribers would, when they renew, send another name with their own, it would help us greatly. Send to this office for specimen copies.

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NOTICES OF THE PRESS.

CALIFORNIAN.

Every lady who admires flowers, also every gardener and every fruit grower, should take the HORTICULTURIST.—*Pajaronian*, Watsonville.

This popular magazine continually improves.—*Alameda Encinal*.

Interesting editorial matter, excellent correspondence, and choice selections.—*Shasta Record*.

It meets the wants of California, where climate and soil differ so widely from that of the older States.—*Santa Rosa Times*.

The contents of the magazine are fresh, varied, and interesting.—*Rural Press*.

The CALIFORNIA HORTICULTURIST ought to be in the hands of every person devoted to the garden, the orchard, and the farm.—*S. F. Bulletin*.

The number for November is the best which has yet appeared.—*Alameda Reporter*.

Full of garden hints and floral enthusiasm.—*Contra Costa Gazette*.

That able monthly, the CALIFORNIA HORTICULTURIST.—*Foothill Tidings*.

Mr. Shinn understands his work thoroughly.—*Salinas Index*.

It adds much to the public knowledge of horticulture.—*Oakland Tribune*.

It does excellent work.—*California Farmer*.

Always fresh and vigorous.—*S. F. Call*.

EASTERN.

Mr. Shinn is a horticulturist by nature, education, and practice.—*Rural New Yorker*.

Mr. Shinn is well acquainted with the needs of horticulture on the Pacific Coast, and is a cultivated and forcible writer.—THOS. MEEHAN, *Gardener's Monthly*.

The motto of this valued magazine has a world of point in the history of the Golden State.—*American Garden*.

The *American Agriculturist*, *Rural New Yorker*, *Gardener's Monthly*, *Country Gentleman*, *N. Y. Tribune*, *Vick's Monthly*, *Prairie Farmer*, *Scientific Farmer*, *Botanical Index*, *American Naturalist*, and *Popular Science Monthly* have all spoken in terms of approval of our work and our success. Each of these journals has also quoted liberally from our pages. This is success worth having.

EUROPEAN.

In looking through its varied and interesting contents, we almost imagine that we are contemplating one of our own British publications, so thoroughly practical and well written are its articles, and so ably edited.—*Horticultural Record*, England.

Our correspondent, Mr. Shinn, makes the HORTICULTURIST better and better.—*The Garden*, London.

Always worth reading.—*Gardener's Chronicle*, London.

Our distinguished co-laborer.—*Illustration d'Horticulture*.

[These are only a few of the friendly notices we have received. Short extracts, and even long articles, have been reprinted from our pages, with words of approval, by journals of world-wide reputation, such as *The Garden*, *Gardener's Chronicle*, *Gardening*, *Horticultural Record*, etc. We thank our many friends, East and West, and we hope to continue to deserve their attention.]

THE

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AND

FLORAL MAGAZINE.

VOL. IX.

SAN FRANCISCO, DECEMBER, 1879.

No. 12.

Contributed Articles.

MILDEW ON ROSES—THE BLUESTONE REMEDY.

By JAMES BLAKE, M. D., Mountain Home, Calistoga, Cal.

You ask me for a few jottings in relation to horticulture, and I feel pleasure in furnishing you with an item. To begin with, I would inquire if this has been at all an exceptional year as regards mildew on rose trees? If not, I hope I have found a remedy for this most annoying disease of the rose. Previous to this season my rose bushes have always been badly blighted with the mildew. Early in the spring, I washed my bushes with a solution of bluestone, using about a tablespoonful to a bucket of water, and trusting that the plants might absorb enough without injuring their vegetation to prevent the attack of the mildew. In the case of wheat the proportion of bluestone which is found sufficient to prevent the attack of the smut fungus must be infinitely small, as each grain of seed takes up about one-third grain of bluestone, and in the adult plant this one-third of a grain is diluted about five thousand times, so that the presence of the fifteen thousandth part of a grain of bluestone in a kernel of wheat is sufficient

to ward off the attack of the smut fungus. It was this fact that led me to use the same substance for my rose bushes, and the result has been that they have been almost entirely free from mildew this season, and have blossomed profusely, although in former years hardly a bud arrived at perfection. Whether this is owing to climatic causes, or the result of the bluestone, I am unable to say, as I have no horticultural neighbors. Of one thing, however, I am certain, that the bluestone is a direct poison to the mildew, as I have dipped some flower buds that were hopelessly mildewed, both on stem and calyx, into a solution of bluestone and they subsequently developed into almost perfect flowers. This year I shall again try it, applying it both in the spring and autumn; and I mean also to use it in my orchard to see what effect it will have on the peach trees, which this year suffered badly from the curled leaf caused by another species of fungus, to which I hope the bluestone will prove a poison. When I have time I will furnish you with some other results of my experience of gardening in the mountains.

[We think that the mildew on roses has been quite as bad as usual this season, as we remember many complaints

from gardeners, and saw heavily milled bushes in several counties of the State.—EDITOR.]

THE HISTORY OF A TREE.

By J. B. ARMSTRONG, Santa Rosa, California.

The writer is not a professional horticulturist. Like most other lovers of nature the little he knows was gained slowly, and there is really nothing new to be said, only as it may serve to show how easy it is, by a little work judiciously done, to beautify our homes. Some rough descriptive papers on the subject of landscape gardening, published by the *Pacific Rural Press*, perhaps caused the editor of this magazine to solicit a contribution.

There is a fine apricot tree in full bearing at our old place. The fruit is enormously large and of good flavor; but no one hereabout knows its name. When we removed to the new place the Madam planted some of its seeds in the corner of a bed in the greenhouse, with a woman's faith in like producing like. She knew there were Moorpark and other sorts in the orchard, and she was informed that grafts from her favorite tree would be more reliable and yield fruit much sooner. No matter, the seeds began to grow, and she nurtured them carefully until orders came to remove her menagerie of slips and bulbs to the open air. One of the apricots, which was about a foot high when planted out, is the subject of this biography.

At first its tendency, like most of the kind, was to branch out thickly, so that the knife was required to keep it from heading too low. But there was such a growth the first year that we grafted the next spring with a scion from the parent tree, leaving a few small branches to form part of the head, so as to compare the fruit in after times. The check received by it was the first shock

encountered. However, it soon recovered, and the buds of the graft began to put forth leaves.

During the interval of retarded growth the body of the tree invited attacks of some of its insect enemies, as was shown by the gum exuding from various wounded parts. This effort of the injured tree to heal its hurts we suspected would only result in sealing up the minute eggs of the depredators. So we went to work and cleaned out the wounds with a wire and sharp knife, and afterwards washed well with soap suds. The result, in due time, was their healing over with healthy bark, without leaving any crevices or hiding places for insects.

To assist the growth, the tree was often forked around and well mulched, and, for awhile, it grew bravely. Its youthful branches began to wave in the wind, and the rustling leaves put on the dignity of a tree-top. Standing by a path where it is seen every day, our watchful guardianship detected the first bold onslaught of the beetle borers where a broken limb, waving in the wind, hung out its signal of distress. It was not thicker than a cedar pencil; but was large enough for the tunneling operations of the borer who began his engineering at one of the axils. When found the rascal was still at work with as much zeal as if he had the contract for widening Dupont Street and felt secure in the protection of the powers that be.

The insect is a beetle about three-fourths of an inch long, with blackish wing covers. Whether it is the flat-headed apple twig borer described by Doctor Fitch, or the marauder with the long latin name, *Agilus ruficollis* (Say), the writer can not tell, but inclines to the opinion it is the last named. At any rate it is the same pest which bores

many sorts of fruit and ornamental trees, particularly affecting pears, almonds, apricots, and some sorts of grapes.

I found a nimble ally in the person of a small grey spider, commonly seen in greenhouses and gardens. His castle was the stiff paper case put around the stump of the graft to protect it from the sun's rays. Within the paper tube, and about the graft, the spider had spun its web. I was about to remove the paper, thinking it might harbor insects, when my friend in grey was discovered dining on a dead beetle. When disturbed in his repast he made off with his load, looking ridiculously small beneath it, like a boy with a bundle of hay.

The tender young shoots of the graft were scarcely a foot in length, covered with soft shining leaves, before they were invaded by an army of lice looking like the *Aphis Brassicæ*, as figured in the books. Attention was first directed to the pests by the curling leaves and suspended growth of the twigs. Close investigation showed the under sides of the leaves covered with insects looking like greyish mealy powder. We might have been safe in leaving their destruction to lady bugs and other enemies; but, not liking the Fabian policy, we tried soap suds and a soft brush at once, and saved the graft. But the growth had been seriously retarded by loss of sap from the weakened parts. Washing the leaves is invigorating. It cleanses them of dust as well as parasites, and promotes growth; for the leaves are the lungs of a tree.

The graft blossomed and offered to bear this summer; but, knowing it would not be good for such a youthful tree to fruit, we nipped it in the bud. Next year it may bear a little, when its loving mistress will receive her first lesson in "like producing like," by com-

paring the fruit on different branches of the same tree.

The well-known habit of the tree to grow ugly, to twist uncouthly and send its limbs sprawling towards the horizon, instead of growing upright and shapely, is bad enough; and the young tree, after being blown upon by the hot north wind of this coast, will remain fixed in a warped position unless tied up. We are training ours in the way they should grow, to tall stout stakes. The writer thinks he has circumvented this crookedness of the apricot by grafting on well grown almond stocks. The appearance of the orchard is certainly improved.

Little by little, patiently and with care, the work grows under our hands; attention to details all the time going hand in hand with plans for future effects of growth. Sometimes years elapse before we are rewarded by their fulfillment; but the intelligent planter never loses courage. He, at least, derives a high and pure gratification from his pursuits. His work is the admiration of all; it exercises a civilizing and refining influence, silently promoting by example a growth of public taste for the beautiful. Even the careless ranchman who might avail himself (and does not) of the bonus of one dollar offered by the State for every tree planted along the roadside, and cultivated three years, will stop to gaze with admiration at the well kept orchard and grounds. Though he may affect to believe that beds of flowers, and groups of ornamental trees, and shrubs, are "no good," and too much trouble, there is, after all, implanted in some corner of the rudest breast a tenderer sentiment that involuntarily worships the beautiful.

THE Irish Yew, though of comparatively slow growth, is a choice tree for any ornamental grounds.

BIRDS.

By Dr. J. W. GALLEY, Watsonville.

Among all the birds which live in the orchard the monarch is the toad. I mean the hop-toad. He is not so beautiful as some other birds, to look at; but, if beauty is what beauty does, the hop-toad is the paragon of the feathered songsters. He sings mostly base and baritone. He does not sing or speak through his nose in the "American style," for which he deserves commendation and imitation. I do not know if toads ever fight or try to scratch the beautiful eyes out of each other, but they can scratch. I have seen them do it. And as they make love desperately I suppose, though I never saw them fighting, that they must fight; because all lovers do fight. I have seen them making love. When I was a small boy I used to take notice of the love affairs of toads. The manner of love-making among these birds has been a matter of interest to ye small boy in all time since naked little Cain and Abel paddled by the brook that flowed from Paradise. Little girls take to turtle doves, but boys go for toads.

But to the orchard man and gardener the affection or animosity of one toad for another, although a very interesting matter and worthy of minute study, is not the point. The point is the toad's constant appetite, and his propensity to catch and eat destructive flies and other insect enemies to the success of human endeavor.

When a toad is riding on his belly down the garden walk, as the glorious summer sun is setting redly in the west, it does not seem to the beholder that the toad would catch an insect. His mouth is shut as a close sealed sepulchre. There is no speculation in the jewel-haunted beauty of his eyes. A

pensive gravity is stamped by the Almighty finger upon the cool dignity of his placid face. But no sooner does an insect buzz up in the path before him than forth there flashes from the front end of him a streak of lightning, and—that insect is no more. There is the buzz of the insect, the flash of the toad's tongue, a slight convulsion of the toad's swallowing muscles, and then everything is pensive, solemn, dignified as before. No man can wink his eye as quick as a toad can catch a fly. Toads do not fly far at a time. Perhaps no other bird takes so short a flight as the toad. But he keeps it up all night. And he catches more flies and destroys more insects than any other bird. If he is disturbed or annoyed it interferes with his business. Like Gen. Grant he wants peace, and he don't say much. He likes to catch and grab many insects and then go away to his little shallow hole in the ground and sing his little song.

If you look closely in the summer morning dust of your garden path you will see the imprint of numerous little hands all along, and these will tell you that the hop-toad has been on duty all night, killing your enemies. He should be encouraged—he should not be disturbed. Nothing discourages him more than a boy with a bow and arrow. The first rule in an archery club should be "no toad shooting." I hope some lately elected Workingman will arise in the next Legislature and urge to its final passage "An Act entitled an Act to protect hop-toads in the State of California," or it might be offered as an amendment to the game laws for the protection of birds.

As to other birds there is a great deal of stuff written, printed, and preached. A few of these other birds are better singers than the toad, but they are very

few. The red-throated sparrow sings well, but he also eats the earliest pea plants and the seed-leaves of many other garden plants, as well as, later in the season, cherries and other small fruits; but the toad never, never eats cherries nor any other thing planted by man. Sometimes the sparrow will take a nip of woolly aphis or other aphis, but not enough to do the farmer any good.

As a general rule if you see one bird going in a flock by himself (if he is not a hawk), he is doing a good work for the orchard and farmer; but when you see more than two birds in a flock there is no good going on. So far as farm work is concerned birds and small boys come under the same rule—to-wit: one boy is a boy, two boys are half a boy, and three boys are no boy at all.

When you see a crow or a blackbird walking in a furrow behind a plowman, that bird is catching grubs and doing some good to humanity; but when you see either of these birds in a larger flock then there is mischief up. The best farm birds, aside from the toad, are those birds which climb around among the limbs of trees—all the wood-peckers, sap-suckers, yellow-hammers, flickers, nut-thatchers, butcher-birds, and in a word nearly all birds which go it alone. But the robins, sparrows, finches, jays, blackbirds, etc., are all thieves; and the poets and sentimentalists can make nothing else of them.

In the month of May, 1877, I shot specimens of all these varieties of birds, except the toad, and cut them open to examine their stomachs. 1877 was a dry year, the mountain wild-berries failed, and the birds came down heavy on my cherries. Pajaro Valley, where I live, is a bird's Paradise, and the "dear little songsters," that year, ate up my early Richmond cherries before they ripened

—ate them all. That's how I came to go into the business of dissecting birds. I'll dissect anything that steals my early cherries. No. On second thought I will not dissect a polecat, even if he should steal my cherries. But he would'nt, though. If you want to know what a bird eats "shoot him on the spot" and cut him open. You've got "the dead thing" on him then.

P. S. Of course I have heard that some birds which go alone in one season of the year may flock together in another season, but such fine points I leave to my reader to find out for himself or herself. The general rule is what I am after, and that, in this case, is: The more flocking, the more mischief—the more single birds, the more valuable work. This reminds me to ask what insects the barn-swallows eat and when do they dine? I suppose Aristotle, Pliny, and Scarabæus Secundus have answered this question in the "dead language," but I do not read such languages. I'd as soon be caught on the wing, robed in black feathers, cawing over a deceased horse as be found reading a dead language.

A BUSH RAMBLE IN NEW ZEALAND.

By C. S. BRACEY, North Wellington New Zealand.

"What a lovely day for a bush ramble" was my first thought on throwing open my window one bright summer morning, as the sweet scent of roses and mignonette seemed to fill the air with fragrance. So, telling my servant Lizzie to prepare to accompany me, and having let my Maori boy know that I should require him, we soon got ready for the walk. Not a cloud was to be seen; the flowers in my garden looked lovely with their varied tints of color; the birds were singing merrily; Tommie and the cats were lying lazily in the sun; and all nature harmonized so

beautifully that you felt a day indoors was not to be thought of. So we were quickly on our way to the bush, Tommie running on before as if he thought the day was too bright to stay behind. We soon entered the bush, after crossing a field in which the cows were lying in the shade ruminating, then we came to some slip rails, and passing through these, a small river skirted by bush was before us.

This river, though often almost dry after continued hot weather, was now running swiftly, each bank lined with different ferns—*Adiantum Ethiopicum* in perfect masses—and trees and shrubs overhung the stream on both sides. A very narrow path led into the bush, the *Clematis hexapetala* covering some of the low shrubs so that they seemed a mass of white star-shaped flowers, exquisite in their simple form and sweet perfume. A large *Nesodaphne* stood on the river bank covered with its fruit, now green and about the size of a small plum. This lofty forest tree is often 70 feet high, and the leaves are usually lanceolate. The fruit, when ripe, is purple, and it is cooked and eaten by the Maoris, and is much liked by the birds; the wood of this tree is white, it splits freely, and is made into shingles to roof houses, but is not equal to some other native woods used for the same purpose.

The path was now, just above the river, covered with *Adiantums* and low bushes of *Myrtus obcordata*, and *Myrtus bullata*. This latter has most curious leaves, which have a swollen, inflated appearance, unlike any other foliage. Both species bear white flowers, and their fruit-berries are dark purple, and sweet in taste. The wood of both is highly valued for tool handles. Many other shrubs grow here, but so closely as to prevent all symmetry of

shape, each trying to crowd out its neighbor. Several tree-ferns raised their lovely canopy of leaves aloft. The little green "blight-bird" was seeking its food on the trunks and branches of the trees, and a pair of Tuis (*Prosthemadera Novæ Zelandiæ*) were making their curious gamut of song. The bush is so thick that the sun seldom finds an opening through the foliage, but when it discovers the slightest opportunity it lights up the whole scene, throwing lovely shadows here and there.

This bush was so thick with undergrowth, that in some places you had to bend nearly double to get through the intricately overgrown path. *Pteris incisa*, some of the *Lomarias* and *Dicksonia squarrosa*, were here to be found. Farther on a *Melicope ternata*, twelve feet high, with bunches of very sweet-scented, greenish-white flowers, large leaves, glaucous above and silvery white beneath, almost blocked our path. Before us a lovely creeper was finding its way up a *Knightia excelsa* to the sunlight. This creeper, the *Parsonsia albiflora*, is fragrant, and has long panicles of white, small bell-shaped flowers; the leaves are a rich green, lance-shaped. The stems of this plant are strong and flexible, and are used to tie fence panels to posts, and for other purposes. We heard the note of several pigeons, but they were too much hidden by the foliage of the *Podocarpus spicata* to be seen. We now came to a beautiful *Alectryon excelsum*, on which tufts of *Epiphytes* were hanging down with grass-like leaves, and whitish flowers in long drooping racemes. They were at least thirty feet up on the branches of this tree, but my Maori boy soon climbed up and threw down some lovely specimens which I especially wanted. He was just down from the tree, when I heard Tommie barking most vocifer-

ously farther on in the bush. By his tone I knew something was wrong, so guided by the sound, at some times creeping, at others cutting our way, we at last reached him, and I must now describe what we saw: Before us was a perfect thicket of Supple-jacks (*Ripogonum parviflorum*) and in this thicket stood a young unbroken horse tied fast. His beautiful shining bay coat showed clearly against the green limbs over his head, but utterly beyond his reach. Supple-jacks fastened him in every way, and the ground under his feet was torn up in his struggle to get free. Every leaf he could reach he had eaten, and now he stood waiting for death. Tommie was lying near him, no longer barking, but anxiously watching what we could do. We all had knives, and I directed the Maori boy first to cut the Supple-jacks from his body, during which the horse stood quietly. Next we cut the Supple-jacks from his back and hind legs. Feeling these free, he began kicking, and endeavoring to extricate himself, but his head and fore-legs being firmly fastened he soon found it was impossible, and again stood trembling all over. We then released his head, and finally his fore-legs. He gave one leap, and we heard him crushing his way to the river, so I sent the Maori boy to prevent his drinking too much. We then forced our way into the bush and narrowly escaped being stung by the *Urtica ferox*, a tall, slender shrub, covered with rigid stinging hairs. Its flowers are small, green in color, borne in racemes. Having once felt the power of this stinging needle, I had no wish to touch it again. Long, training vines of *Convolvulus sepium*, with its large, broad corollas of four inches across, white and rose-tinted, hung from tree to tree, and pretty fan-tails were flying about or resting on the

slender branches of the *Hoheria populnea*, a tree nearly twenty feet high, and covered with clusters of large white flowers resembling cherry blossoms. The bark of this tree is remarkably tough, and strips of it can be used for tying. It is often called "lace bark" by the colonists. Moss here carpeted our feet, and lovely lichens were on many of the trees, showing shades of green, greys, and violets curiously formed, but all beautiful. These lichens usually grow on decayed or fallen trees. Next we came to several *Pitosporum*s, the yellowish tinge of the leaves of *P. Engenoides* forming a beautiful contrast to the other shades of green. A fine bough of Mistletoe (*Loranthus micranthus*) hung on a tree near. When its yellow berries are ripe the birds quickly eat them. A number of small wren-like birds, called by the natives *Pipipi*, were numerous here.

We pushed through a labyrinth of Supple-jacks, cutting some down to force a passage; these are very useful in many ways, making excellent flower sticks, etc. A noble *Podocarpus dactyloides* stood before us, looking like a giant among the other trees, being at least one hundred feet high. Climbing up a tree near it was a *Passiflora tetrandra*, with green flowers borne in two to four-flowered cymes, handsome leaves, and berries of orange red. The birds eat these berries so eagerly that it is difficult to collect any for seed. Under the trees grow plants of the *Libertia ixioides*, with rigid leaves and white flowers formed of three petals. The umbels are composed of four or five flowerheads. It belongs to the *Trideacæ* family, but has no scent. We now came to large bushes of the *Veronica salicifolia*, which usually selects the outskirts of the bush, so I knew we should find an easy exit. We gathered large boughs of this *Ve-*

ronica for our cows, who were waiting to be taken home for milking, and they quickly came towards us for the foliage they like so much. The sun was now sinking in a golden frame-work of clouds and a singing lark was high in the heavens. Thus ended this bright day of our bush ramble. I only wish my readers could see and enjoy the climate and scenery of our New Zealand.

[The word "bush" is used, in this article, in its original meaning—that of a thicket, or tangled forest. The settlers of South Africa, Australia, New Zealand, and Canada use it in this way. So, also, the elder English poets speak of the "boske," or of "bosky lanes," and Chaucer uses the term "bush," meaning a thicket.—EDITOR.]

HORTICULTURE AS A PART OF EDUCATION.

By HENRY SHAW, San Rafael, Cal.

It is not perhaps desirable that all should attempt a degree of familiarity with every branch of knowledge, but a practical acquaintance with the leading principles of horticulture may justly be considered one of the essential parts of a true education. Some accomplishments may be said to be devoid of much real value except as keeping the owner out of mischief. Others, are attainments with more or less value as means of culture, but of no pecuniary value, while horticulture is the most perfect instance of healthful, profitable occupation combined with entertainment.

The time has passed when horticultural knowledge was only used to accomplish strange, or fanciful, or fantastic ends. Newness in plants and in methods of planting and of combination has its beauty, but there is a still greater established value in the attainments of earlier horticulturists. No other art conduces so much as this to

permanence of habitation, and to love of home. The old apple tree, the oft-visited currant and lilac bushes, the ivy vine, the snowball, and the doorway of grass, whether dressed so as to deserve the name of lawn or not, can never cease to charm us even though they are old. In fact, here age lends additional charms. The pines and chestnuts known in our childhood are prized more than others of late years.

California horticulture deserves a separate chapter. In many respects it differs from that of the older Eastern or Western States. Much of our experience elsewhere acquired has to be modified here; and the new methods also varied to our wonderful diversity of soil and climate. Still, through all this variety is a sameness peculiar to California. Our experimental stage is fast passing away, and we begin to know what is profitable, what is desirable, and how best to use the great requisite—water, and how best and cheapest to elevate, carry, and distribute it without waste, or injury by too free use of this indispensable agent in all our operations.

The greatest value of horticulture as an art, is in its capacity of making density of population possible. The best interests of humanity demand that population shall be concentrated, rather than scattered, and this especially in the most desirable climates. Of course, beyond a certain limit this would cease to be a desirable end. A population as dense as it is in France begins to be overcrowded. But bridges, roads, and schools cost no more in a thickly settled country than where one-half as many people are in the same territory.

In our State, the markets for some products are crowded by the wonderful productiveness of the reclaimed tules. Again, the foothills, once thought of no

value, glut the market with fruits of the best quality. With relation to many fruits, the question of cheap labor has much to do. Whether we can afford to grow olives, or almonds, or many kinds of dried fruits, depends upon the present and future price of labor. If we must keep our children from school to compete with Chinese labor, there are few products we can afford. Some things we must learn slowly, and slowest of all we seem to learn that in some way we are compelled more and more to compete with the poorly paid laborers of all parts of the world. The constantly increasing facilities of intercourse by land and sea seem to aggravate this evil to civilized humanity, an evil which I feel sure can not be entirely corrected by excluding the Chinese or by imposing heavy duties on imported goods. It is not the purpose of this article to attempt to solve this problem. Political problems are not in our line. But whatever elements of rural economy may be promoted by increase of civilized rural homes, we will help to foster by encouragement of the graces of floral adornment, and the luxuries of abundant fruits. We will add to our homes, whether of one acre, or of ten acres, such attractions as we can afford, for the sake of the enjoyment they impart, and the help they are to the education of ourselves, our sons, and our daughters.

CRITICISMS ON ROADS AND LAWNS.

By W. A. FRYAL, Oakland.

Nothing surprises the lover of the beautiful in nature more than to see the sad combinations which are sometimes seen in gardens of our cities, and even in the country. We have some such places in mind that are so devoid of all which goes to make a house and its surroundings picturesque that we are lead

to mention some of their faults as a warning.

At one of these places there is a massive wooden fence, painted and sanded, hiding a Monterey Cypress hedge. The latter is about two or three inches lower than the fence. Reaching from the gate to the door of the dwelling is a drive-way, laid out in a straight line, with no regard to any landscape beauty.

Nor is this all, for one of the greatest absurdities of these modern days has been introduced into this place at a cost of over five thousand dollars. This in-artistic drive-way has been covered with an almost glass smooth artificial stone pavement, which reminds one of the costly stone-flagged sidewalks around some of the public buildings of San Francisco—the Palace Hotel and the Nevada Bank for instance. The stone-covered walks leading to the State Capitol are of course very appropriate there, but those modern abominations for carriage drives are altogether out of place near a suburban residence. Few horses are used to them. The clatter of their hoofs, especially when there is an echo, produces a noise that no animal of a nervous disposition will become accustomed to, and the only wonder is that there are not more frightful run-aways and fatal accidents resulting from the use of this material for roads. No better road bed could be desired than a good macadam of some rock that is of a good color. Gravel will, generally, make a good covering for roads and foot-paths. If cement is to be used in the garden let it be only for walks.

As we have noticed drive-ways we will here state that the best we have ever seen are those on the beautiful grounds and leading to the mansion of Horatio P. Livermore, about four miles north of Oakland. They are wide, of

an easy grade, and wind about the hills and through the dells of the park in the most pleasing manner possible. The covering is of a light chocolate-colored rock. The color may be objected to by some as being a little too dark, but still no better road for a private park could be desired. The first coat is rather coarse, and on the top is spread a finer and softer quality of the same rock, which, after being sprinkled and rolled with an iron roller, packs down to the required degree of firmness. Even after a heavy rain the surface is so dry that the wheels of a carriage will not be muddy in the least.

To return to the garden where the concrete predominates. An oval lawn may be seen, in midst of the conglomeration, and in the centre of it is a well designed fountain. The lawn and fountain would pass without any unfavorable comment, but the whole aspect is spoiled by some gum trees standing between the lawn and the street. Other gum trees mar the beauty of the place by being in front of trees of lower stature, thus spoiling the foreground.

Another place not far from the city limits of Oakland has, on the lawn in front of the dwelling, some blue gum trees and a couple of *Acacia latifolia*. The lawn being small and the distance between the house and street too limited for such trees, not only will the lawn be ruined, but the house will lose all its beauty as well as the garden. The *Eucalypti globulus* are excellent trees in their place; perhaps no other will ever take their place in this State as a fast grower, or a tree which furnishes fuel; but for a small lawn, or, in fact, on any limited extent of ground, they are a nuisance, and should be abolished.

On the same street, but within the city, is a large lawn, and on it, midway

between the house and sidewalk, are two large red gum trees with open spreading branches. The trees are some twenty-five or thirty feet across the branches, and cover considerable of the area of the lawn. They give the place a majestic appearance, and are the admiration of all.

MY TUOLUMNE HOME.

By JOHN TAYLOR, Mt. Pleasant, Tuolumne Co., Cal.

The editor of the *HORTICULTURIST* asked, some time ago, for a description of our surroundings in this vicinity. That is not so easily accomplished. A place so familiar as home must be, wears no garb of interest to the possessor, except when labor is to be performed or improvements are to be made, etc. Scenes daily presented to the eye can not have such a romance attached to them as if they were seen for the first time. But this feeling is all wrong. What is of very little interest to us may be of some value to others; so I will try to give you some glimpses.

Our county — Tuolumne — is being made famous for gold discoveries. Also for big caves, which will turn the steps of the tourist hither. Mount Pleasant is situated among the foothills, occupying a small valley, out of sight and hearing of all the outer world. The hills surrounding us are very barren, nut pine and chaparral being the only growth, stones in place of soil, a pasture only fit for goats. But here, in the low lands of the valley, we "pitched our tent" nearly twenty-two years ago.

Our cottage home is almost embowered in shade, variety taking away the monotony of color. We have the alantus, Lombardy poplar, pomegranate, box, orange, fig, weeping willow, and locust, also a variety of roses, etc. Among the runners is the prairie rose, small, but prolific and beautiful. A

white running rose has attained a length of over sixty feet, almost covering one end of the house. The growth of trees and flowers is far beyond expectations. Our garden is small—only a few acres, but the trees and vines produce well, especially the figs. We have some twenty-four trees—enough to keep one person busy while the crop is maturing. All varieties of fruits and vegetables grow abundantly among these foothills, where water is accessible. We have two large springs, one to supply stock and one for use around the house. We have about two acres of corn—some Egyptian, a little yellow, some white, some sweet, and a small patch of pop corn. Our peach crop this season was above an average. We dry what we do not use ourselves or sell. At this writing (Oct. 1st), we have three or four trees laden with late peaches for home use.

Our little valley of one hundred and sixty acres appears like an oasis to the denizens of the dried-up plains, and many an exclamation is made—"This looks something like a home." Yes, but home can be made beautiful by sympathy and good cheer better than by mere wealth and location. My experience in shade trees is this: fruit trees pay an interest on the labor expended, but shade trees merely for shade can not be afforded on small places. We have a black walnut tree at the kitchen window, and it is bearing fruit for the first time this year. Besides being of value for its nuts, it is one of our most beautiful trees. Box is of slow growth. It is an evergreen, and fills up a small space; but the orange is similar in appearance and more profitable. Beauty and use should go together in decorating grounds.

Of course, we have apples of various kinds, so as to give us ripe fruit from

June to January. The pear is a very prolific bearer. In fact, I know of no fruit or vegetable but what will yield well here if only taken care of. The only drawback to extensive cultivation is lack of water, and distance from market. We have no railroad to convey our produce to San Francisco, except that at Oakdale or Milton, a distance of nearly thirty miles from here. Poultry is the universal dependence of the settlers. They are profitable, but are destructive to gardens when allowed a free range.

Men who make their homes in cities can have no conception of the many peaceful and happy homes which exist in out-of-the-way valleys of the foothills. Some of these are artistically laid out, and a very Eden in appearance, where the owners find health, happiness, and general content. One year follows another with like results. The only blank left unfilled, is a lack of literary association, a lack which we hope time will supply.

Our flower garden occupies considerable space around the house. To name some thirty or forty varieties of flowers would take up too much time and space, but no home can be counted such without flowers, fruit, and children, which last are God's flowers that bud and blossom for eternity. May their young and tender minds be stored with the love of the beautiful from the pages of the *HORTICULTURIST*. So much poison is sent out by the press that it is refreshing to have a few weeklies and monthlies which cultivate the true and the pure.

Let roses bloom and myrtles twine,
And violets give their fragrance free,
'Tis emblem of a land divine,
Where gardens wait for you and me.

POETRY on fallen leaves is the saddest kind of song.

NOTES FROM OUR EXCHANGES.

SOIL FOR DOUBLE PRIMULAS.—The best soil for double Primulas is a compost made up of good, strong, new loam, leaf-mould, rotten manure, quite destitute of insect life likely to be harmful to the plants, and silver sand. The cuttings are to be taken from two year old plants, and placed singly in thumb-pots in a good bottom heat. As soon as the cuttings are rooted, pot them off into similar compost, and see that they have good drainage.—*Florist and Pomologist*.

TO A FIRE-FLY.—This quaint little poem comes from the *Horticultural Record*, London:

Though small thy lamp,

No brightest star may vaunt itself o'er thee,
As home, belated, to his grassy camp

Thou lightest the tired bee.

Thy mission no man knows,

To judge of thee. The mites thy critics are.

To the small folk that populate yon Rose

Perhaps thou art a star.

Atom of the same light

That floods the world from the bright sun at
noon,

Above the insect cities thou to-night

Dost hang like a white moon.

COAL-ASH WALKS.—Good walks are a necessity in all garden grounds, in order that work may be carried on with comfort during all weathers, and although there is nothing like good gravel for walks in pleasure-grounds, it frequently happens that, from the difficulty of getting gravel in quantity within a reasonable distance, the kitchen garden walks have to be made of whatever is most abundant. After trying all sorts of materials, it was found that nothing makes a better path than ashes. In the bottom of the walk are put brick-bats, stones, or other rubbish. On these a good layer of clinkers is spread and

broken down tolerably fine, when a good coating of sifted coal ashes is spread evenly over the surface, and rolled down.—*The Garden*.

A PRETTY ROCK PLANT.—*Hypericum Olympicum* is a useful border or rock plant, blooming as it does when flowers are somewhat scarce. It forms little compact, erect, greyish tufts, ten to sixteen inches high, and bearing a profusion of bright yellow flowers nearly three inches across.—*Gardener's Chronicle*.

A PIGMY SPIRÆA (*S. cæspitosa*).—One of the smallest, if not the smallest, of Spiræas is this singular Alpine species. The leaves, which are from $\frac{1}{4}$ inch to 1 inch long, narrowly spoon-shaped, and silky and glaucous on both surfaces, are arranged in dense rosette-like tufts springing from a woody root-stock; they are numerous produced, and form a spreading carpet-like tuft, similar to the Stemless Catchfly (*Silene acaulis*). The flowers are from one inch to three inches high, terminated by a dense cone-like spike of flowers, which are very small and white. It is a native of the mountains of North America, from North Mexico to Northern Nevada, where it is found growing on rocks, etc.—*The Garden*.

HOW TO GROUP SHRUBS.—The intelligent grouping of shrubs adds much to their effect. A few hints may help. (1.) Plant the larger-growing in the centre or rear of the group. (2.) Combine a few small-growing evergreens with each group, so that they may not be dull in winter. (3.) Set them not less than ten feet apart. Shrubs, like trees, if crowded, become unsightly. (4.) Set together those that blossom at different seasons. (5.) Plant purple-leaved and variegated-leaved shrubs as single specimens.

A lawn is rendered exceedingly pretty dotted with a purple berberry, a golden yew, and the dark-green dwarf evergreens; while in groups such shrubs are lost.—*Horticultural Record*.

THE MESQUITE OF TEXAS.—The Mesquite hardly ever exceeds two feet in thickness, and grows about thirty feet high, has a splendid, somewhat tropical look, leaves of a light green color, light and drooping, blossoms fragrant and in yellow clusters. Its habit is similar to that of a weeping willow. The fruit is a pod from five to seven inches in length, containing from ten to twenty seeds. The pod is of the nature of paper and is filled with pulp, which envelops the bean-like seeds. Hence its value for fodder for cattle. The pods are eaten by horses and cows off the tree, and quantities of them are collected and saved for winter. In Jamaica and in Australia, the English government has, for the sake of this fodder, introduced the Mesquite with good success. The trunk exudes a rosin which is not inferior to gum arabic, and is collected and exported. The wood is of two colors, the inner part is reddish-brown; the outer, nearest the bark, light yellow, and makes nice ornaments for furniture, and is worked into boxes, etc., but is mostly used as fuel, burning slowly and giving out a great deal of heat.—*Gardener's Monthly*.

A CENSUS OF CAMBRIDGE BOTANICAL GARDEN.—An enumeration has recently been made of the plants in the Cambridge Botanical Garden, with the following results: 1,510 genera, all told; 5,901 species, all told; hardy, 3,641; tender, 2,260. Among these are 247 species of Orchids; 387 species of Ferns; 583 Cacti and other succulent plants; 42 Selaginellas; 36 Bromeliads; 46 Palms;

and 430 hardy trees and shrubs, together with 112 half hardy ones, as *Ancuba*, *Cupressus* and *Hollies*, and exceptionally small ones, as *Erica*, *Arctostaphylus*, and the like.—*Gardener's Monthly*.

CULTURE OF TACSONIA VAN VOLXEMI.—This climber delights in a position where it receives during the growing season a maximum of light and a free circulation of air. A slight shade in very hot weather is beneficial, but care should be taken not to exclude more than is necessary to prevent scorching from the rays of the sun. It would certainly give more satisfaction planted out in a bed of two-thirds fibrous peat, and one-third turfy loam, with which may be mixed some pounded brick and silver sand.—*Gardening*.

ORCHARD NOTES FOR DECEMBER.

PRUNING.—To prune trees is a delicate and after all a somewhat tantalizing task. It is so easy to cut off a limb; it is, for one who loves a trim orchard, so pleasant a task to shape the growth of a pet tree year after year, that the continual temptation is to cut too much. No one ever yet pruned a tree rightly without some knowledge of the way in which that tree grows. The true art of pruning is as many-sided as is the art of painting, for it has a different way for each different subject. The tree which is by nature upright, as the *Spitzenberg*, is, under a proper system of pruning, built up on that basis, and not foolishly wrested out of shape and character to ape the drooping boughs of the *Greening*, *Smith's Cider*, or *Bell-flower*. In other words, you shall do your best with a tree, to make it an ornament to your grounds, but you shall not ruin its distinctive features. This is the artistic law of pruning.

Now, if you come to the practical part of pruning, be it said that it must not be spasmodic. By that we mean that you must do about what is needed each year, and not neglect the orchard one year to double-prune the next. That system is ruinous. Every large limb sawed off is the proof of a former mistake or neglect. There are, among hired men, very few good pruners. The men who understand it thoroughly are above the average, and will not long continue to work for wages. The average farm hand works on twos, or threes, or fives, in the matter of leaving branches, and he wishes every tree conform thereto. The rule for cherries, peaches, and apricots is to form a low head, so as to protect the trunk from the sun. Pruning should be done early, so as to get the brush out of the way before the plowing season comes.

USES OF BRUSH.—In places where there are streams which are liable in times of flood to wear the banks, fascines, or bundles of the orchard trimmings, should be built up against the threatened bank, and well secured and pressed together by a sufficient number of stakes, some driven vertically and others horizontally. The stakes may be so placed as to be secure from the force of the water, and their tops should be fastened together so as to keep the brush from lifting bodily. As a cheap temporary fence, brush woven between two rows of stakes may be made useful. But its chief value is for kindling wood. Cut up green, and allowed to get perfectly dry before it is housed, and kept dry all winter, there is nothing more satisfactory. Even the smallest twigs may be used. Evergreen trimmings, from the lawn and garden, possess a peculiar resinous property which makes them of unusual value when dry, a handful of smaller twigs lighting from

a match. No housekeeper who has ever tried the pile of dry brush clippings will ever feel the need of that vicious fire-kindling element, coal oil, which has been the cause of so many accidents. Larger branches can be made into stove-wood, and if well seasoned, will be found second only to live-oak in heat-producing qualities.

CULTIVATION OF THE GROUND is now the task in hand over most of our State. The early rains have started a multitude of weeds, and if turned completely under they act as a sort of green-soiling, and add much to the productiveness of the orchard. In our climate weeds must be turned completely under, or they grow at once, during the rainy season, and soon make a wilderness again, if not checked. Then, also, if weeds are left until the latter part of the season before they are turned under, they have usually become so woody and hard that, the rains being nearly over and hot weather coming on, they fail to rot well, and make the ground dry out, and unfit it for a crop generally. For these reasons, aside from the mere desire to have his work done, the orchardist should plow his ground early, and deeply, nor should he at any time let the weeds get ahead. In farming and orchard work one puts himself against the ways of the weed-sowing winds, and weed-helping rains; he disowns and puts aside, and declines to accept the countless grasses, clovers, mallows, thistles, and vines innumerable, which would like to grow in his soil. The power to do this, either by brain acting through hands, or by brain acting through machinery, is one of the things we mean when we speak of the dominion of the world. Civilized man is a weed-slayer. Our best orchards are plowed twice and harrowed after each plowing, besides being cultivated

several times to destroy the young crop of weeds. On the best lands of our valleys this course seems necessary. There have been seasons in which once plowing was enough. The first plowing was thrown from the trees, and the second towards them.

GRAFTING TREES.—There is hardly an orchard in which some of the fruit trees are not of old and comparatively worthless kinds. There is hardly a single orchard in this State in which there is not some waste. It is worth while to change over the unprofitable trees, and it is time to get ready for the work. The principle of tree-grafting is simply that, after having sawed off a limb, you split the end of the stub, insert wedge-shaped bits from another desired kind. But this simple piece of work must be done with the utmost care and nicety, the bark of stock and scion must be made to touch as closely as possible, and the whole must be wrapped with grafting wax or with prepared cloth. A good grafting mixture is made from rosin, beeswax, and tallow, equal parts melted together. Pour a portion into cold water and work it with the hands until it looks like molasses candy. This will be found of great value for covering grafts, not becoming hard, but remaining pliable always.

WINTER APPLES.—These, if rightly gathered and kept in a dry cellar, or on shelves of a fruit house, are hardly beginning to rot, but it is well to pick them over every month after this date, in order to separate the decayed apples from the sound ones. We do not think our climate is much to blame in the matter. Apples gathered without the slightest bruise, and put away in a cool, dry place, will keep longer than most persons imagine. The apples grown in the valleys are capable of later keeping than is the commonly received opinion.

In the Pajaro Valley we are informed of Bellflowers kept till March, and yet many valley people fail to succeed with the Bellflower, which is a very tender skinned variety. The Yellow Newtown Pippin is the best keeper we have. Ben Davis and Swaar are also good keepers. The Russets are not very satisfactory apples in the valleys. Nor is the Baldwin, which reaches its perfection in the mountains. Rambo, a beautiful fall apple in the colder parts of the State, is comparatively worthless when grown in the valleys.

GARDEN NOTES FOR DECEMBER.

FERNS IN THE RAVINES.—This is our month of cold nights, and of alternated rain and sun. The fresh young grass is soft as down to the touch, as we lie in sheltered country nooks and think how different from the bleak and savage December of English poetry is this busy and happy month of ours. Along our coast ravines the awakening ferns are pushing their brown, heavy buds through the soft earth, near the bases of mossy rocks. After awhile the curious volutes will uncoil, and the clusters of crimped, emerald leaves will woo many tired wanderers from the great city, and crown them with gifts of peace and with memories of childhood. No matter how many ferns you may have in the garden's shady places; no matter how much work presses you, yet it is best to take the time, and to forget about the valley gardens for at least one day in December. The hours spent thus add weeks to life and ages to enjoyment.

OUR GARDENS.—In the narrow and fenced in gardens of our valleys, this is a month of hope and toil. We must change and remove plants, make flower beds over again, plant shrubs and trees, sow seeds, put in cuttings, and in short,

lay numberless plans, some of course to fail, but others to struggle to a victorious termination. (If each one of our plans always succeeded we should never have any clear sense of victory.) The work of pruning, manuring, and digging the surface of the garden beds may still be done, though November were better in most cases. Use only well-decayed manure and leaf mould; where the soil is heavy use sand, loam, and leaf mould. Gather the weeds and refuse together and burn them, spreading the ashes over the surface. If the garden walks have become worn in the middle, so that water will stand in pools, put on a wheelbarrow load of fresh gravel or shells, round the path up well, and sprinkle and roll it.

FROST.—We are liable to occasional frosts which cut down fuchsias, pelargoniums, and other tender plants, even in the valleys of our State. The only plan is to have old sacks, straw, or boxes, with which to cover tender plants for a few nights when frosts appear likely. When the evening is clear, cold, and windless, look out for frost. If a heliotrope is cut back, and a forkful of straw put over the crown, it will go through the hardest frosts of our valleys. As soon as we get above the valleys, on the hillsides, the frost is not worth mention, and no protection whatever is needed, except in very exceptional seasons. There are favored and sheltered spots in almost every county of the State, where frosts appear to be unknown, and such places are full of the most entrancing possibilities, and hints of homes in the midst of endless summer.

WEED KILLING.—This is an important December question. It is irrefragable proof of horticultural laziness when a man lets the weeds get the start of him. Weeds are absolutely pitiless. They never slacken their growth while there

is moisture or nutriment left. They fairly revel and flaunt wide leaf-banners, and possess the land. They grow so fast under our warm, early rains, and streaks of sunlight, that one feels at times helpless, and smitten with a dull sense of despair. Unremitting toil is not desirable. One prefers to eat a meal occasionally, and some little sleep is thought to be important. This is one of the misfortunes of human nature. Weeds eat, sleep, and grow, grow, sleep, and eat—as it were—all at once, and together, and always. The earnest gardener must smite them hip and thigh, for they are the veriest Philistines. They must be plowed or dug under when small, so as to help fertilize the soil. If this is not done during this month, we may have so much rain in January or February that the ground can not be touched until the weeds have almost taken possession. See that you destroy the early crop of weeds, and you will be ready for the later crop when it makes an appearance.

SELF SOWN ANNUALS.—Some self sown seedlings of annuals may now, in regions of early rains, be nearly ready to transplant to permanent locations. Lesser annuals, which only bloom for a few months in the early part of the season, may be planted closely so as to make a display as soon as possible. Most annuals look better in small masses, or groups, not in formal beds. Rake the ground among them quite frequently, and particularly after each rain, as there is nothing plants like better. In some cases it is best to thin out the self sown seedlings where they stand, and stir the surface as much as possible. Such plants will probably be the first to bloom.

CUTTINGS.—This is the season for planting out cuttings of deciduous shrubs, and of roses. Select a warm,



TORNELIA.—*Tornelia fragrans.*

well-sheltered, slightly sloping bed with a southern exposure. Sandy soil is the best for starting cuttings. Take well-ripened, short-jointed wood, cut it with a sharp knife, and make cuttings ten to twelve inches long. Set them in the ground in rows three feet apart, sloping them somewhat, and packing the soil very closely about the base of the cutting. If these points have been attended to, there will hardly be a failure out of whole rows of cuttings.

IMPROVEMENTS TO BE MADE.—This is the time to notice the vacant places where plants have died, and to study the lacks, the failures, and the mistakes. Perhaps a path is to be changed, or new flower beds made, or a tree has grown too large, and must be removed from the tiny garden plot. Then, too, plants must mostly be ordered from the nursery this month. The best plan is to visit the nursery, see the plants yourself, purchase what you choose, and order them shipped to you. See them marked with your name, and set aside, and you will get precisely the plants you purchased. Early blooming and deciduous shrubs ought to be planted this month. This includes Lilacs, spireas, deutzias, snowballs, hydrangeas, wigelias, syringas, calycanthus, kalmias, ceanothus, flowering currants, and all similar shrubs.

A GRASS VALLEY GARDEN.

By MRS. S. P. DORSEY, Grass Valley.

I accept the kindly invitation given to the friends of your interesting magazine to occasionally interchange opinions on the subject which forms much of the happiness and beauty of our lives. "Out of the abundance of the heart," etc., I talk of flowers and plants because I love them, and they seem to return this love, for they grow most affectionately for me.

With the best brightness and bloom departed from the garden; the withered stalks removed that so lately upheld gorgeously petaled flowers; seeds gathered from the finest varieties; waving plumes of pampas grass brought in to embellish corners here and there indoors; the luxuriance of festooning vines trimmed away; the most delicate plants removed within—still there yet remains enough of beauty to tempt one to linger in the scenes of past glories.

Dablias still proudly lift their richly-hued heads to the stirring breeze; late planted Gladioli still throw upward flowering stems; ever-blooming rose bushes, striving to atone for their enforced quietude during the extreme heat of our summer, array themselves in the loveliest perfumed blossoms, while the verbenas are one mass of brightest colors, encircled by the Golden Feather (*Pyrethrum*).

The weather is most lovely, and balmy as late spring, and I hover between garden and greenhouse, first tempted by one, then ensnared by the other. To-day I have been busy repotting and trimming pelargoniums, callas, and young fuchsias.

Our summers are too hot for fuchsias to bloom finely; mine are just now, as the weather becomes cooler, coming into full bloom. Of these "Tower of London" is the finest. But when winter comes in earnest, with its low-hanging clouds darkening the day, with the drenching rains, the wild stirring tempest, then I turn to my beloved ferns for pleasure. No matter how tenderly you care for the flowering plants, and warm and shelter them from the keen blasts, they seem to grieve for the sunshine, and often will not be comforted; but I find the ferns always responsive, always cheerful company. With my sitting-room opening into the

fernery, it is no matter how gloomy matters are without, for I can always look into a vista of verdure, delighting my sense of beauty with views of ever-graceful fronds in all stages of growth and development.

Let me persuade some one of your plant-loving readers, who has not yet made a trial of fern growing, to begin with a few specimens, and after watching the up-springing growth gracefully uncoiling its fronds, and noticing the beautiful regularity of the disposal of the seed, and the changes which sometimes occur in different parts of the same plant, he or she will, I am sure, cultivate them ever afterwards, and wonder how they did without them so long. I can not write learnedly of the ferns, but I assure you I can speak and feel most lovingly about them. Some of the most pleasant drives and rambles I have are when I am hunting them in their own mossy and shady nooks, by streamlet and in fairy-haunted glens. I challenge anyone to disbelieve in faries if they once go fern-hunting.

October 19, 1879.

Correspondence.

[The editor of the CALIFORNIA HORTICULTURIST cordially invites all persons interested in any branch of horticulture to send practical questions and notes of their own successes and failures. A brief, unadorned statement of events in one little garden may often prove of universal interest. Short notes from busy people, all over the Coast, will make this Department fresh and valuable.]

BOTANICAL QUESTIONS.

EDITOR HORTICULTURIST—Dear Sir: I notice in an article on the Scilla, in Case's Botanical Index, that our *Camassia esculenta* is described as *Scilla Fraseri*, under authority of Prof. Gray. Whether it can exist with *S. Fraseri* of the Mississippi Valley, under the same name, time will tell. Can any of your readers tell where the White or Death

Camass has found a resting place? In my remarks on the latter two months since I should have mentioned its flower cluster as a raceme, as it is only a quasi spike in its most poverty stricken locations; it is generally racemose, but in very favorable situations paniculate. I also note a notice of "The Liliaceae of North America," by Seveno Watson, do you know where it can be obtained? Is Prof. Rattan's *Calochortus Macawanus* identical with *C. elegans* of some, and *C. liliacinus* of Lindley and Pursh? Most of our liliaceous plants have had as hard a time to find a resting place as *Camassia*, so if you have access to any authorities many of your readers would be glad to know where to find them. Last, but not least, will not some one note the differences between *Lilium parvum*, *L. maritimum*, and *L. Parryi*?

San Juan.

J. B. H.

EASTERN AND CALIFORNIA WILD FLOWERS COMPARED.

You ask me how the wild flowers and trees of New England compare with those of California. As to flowers, you must remember that the New England summer is shorter than ours; in October it may be called over. During September there are golden rods and asters, but you only see a few late asters in some shady corner now. The asters are lovely, prettier than any late flowers of ours. The chief difference is, that instead of growing in hidden places as with us, the flowers here grow along the lanes and roadsides; but they don't have great spreads of flowers in the fields and on the hillsides, as we in California have of the *Eschscholtzia*; the sprinkling of white or purple that the daisies and asters make is the nearest like it. Our wild flower season runs from willows and flowering currants in January to wild roses and beach ver-

benas in November; theirs from the first May flowers and anemones late in April or early in May to the last asters in October. But their roadsides, owing to the summer rains, keep up a good show later than ours.

Then, too, they have a splendid lot of cherries, red and yellow, and purple and white, all the fall through—bittersweet, and woodbine, and wax berry, and bunch-berry, and checker-berry, and Solomon's seal, and rose hips, and many that I don't know the names of.

I think their superiority lies in the way their flowers invade cultivation, or rather live contentedly side by side with the invader, like Saxons and Normans, instead of retreating before it to mountain fastnesses, like Kelt before Saxons.

Then, too, they have May flowers, and violets, and daisies, and wood lilies, and pond lilies, all lovelier than anything we have, except nemophilas and calochortuses, cream cups, beach verbenas, and scarlet mimulus. A good many of their spring flowers I have not seen. Then they surpass us in wild berries, nuts, wild vines, and native trees. We have, west of the Coast Range, scrub oak, white oak, sycamore, laurel, alder, willow, maple, redwood, buckeye, madroña, and manzanita, and those not all in one locality. They have maple, chestnut, hickory, birch, horse chestnut, varieties of oak, pine, linden, buttonwood, and elm, all right around one village, within fifteen minutes' walk.

But we can discount them on fruit, and it is all talk about their apples having better flavor than ours; they think so from the big, tough, showy apples brought here from California. * * The ground under the chestnut and hickory trees is thick with nuts. If you were here we would have fun. M. W. S.

Farmington, Conn.

FLORICULTURE AT THE EAST.

EDITOR HORTICULTURIST—Dear Friend: I arrived a week ago last Thursday, after a most agreeable trip, and I take my first opportunity to drop you a few lines.

When I left the East the trees were quite bare of foliage, and everything began to look wintry. Here I found everything as fresh and green as one could desire; the flowers under my brother's care I found in excellent condition. Along the line of the railroad, between Sacramento and Omaha, few flowers greet the traveler. Here and there in front of some eating house we find a small plot of ground nicely fenced in and sown in clover, in the middle of which we sometimes find a rose bush looking lost and forlorn, but even this, small as it is, is gladly greeted by the traveler whose eyes have become weary of the long and dreary plains over which he passes.

In the East, as a rule, lawns are oftener seen than flower beds, and are found in front and surrounding quite all of the many pleasant houses to be seen in the suburbs of cities. Here and there we find a few flower beds planted with petunias or some other easy plant to grow.

In spite of all the good work being done by our writers in promoting floriculture, I find that a vast amount of work is yet to be accomplished before the beautiful flowers occupy their proper place in every home. While there are many handsome gardens, as a rule, where there is an attempt at floriculture, an artistic taste in laying out the beds and planting them is sadly overlooked. I sincerely hoped to find floriculture in a more advanced state than it really is. WM. C. L. DREW.

El Dorado, October 27th, 1879.

FRUIT AT NEWCASTLE.—A letter received from E. B. Silva, of Newcastle, states that "apples are very wormy." The codling moth, we suppose. Fruit trade at the Newcastle Fruit Growers' Association has been brisk, and prices good. Times generally seem to be much better, and people hopeful. Mr. Silva's letter ends, as do many we receive these days, with a compliment to the *HORTICULTURIST*, which he declares to be "a necessity."

RAPID GROWTH OF PAULONIA.—A *Paulonia imperialis* on the Magnolia Place planted last spring, when about a foot and a half high, is now ten feet in height and two and one-third inches diameter at the base. It has not been watered at all, and is still growing vigorously; will it be likely to sustain injury from frost?

LEONARD COATES.

Yountville, Oct. 22nd, 1879.

[The terminal bud will probably be destroyed and the tree made to throw out branches, should frosts this winter be in anywise severe.—EDITOR.]

FROM THE BRISBANE BOTANICAL GARDEN.—Prof. Walter Hill, of the Brisbane Botanical Garden, writes to us, under date of Oct. 2d, and sends us some valuable seeds, which shall receive every attention, and also incloses a copy of his last report on the Gardens, and also on Timber on Fraser Island. These reports are more fully noticed elsewhere. Prof. Hill goes on to say: "I am much pleased to hear that your Prof. Hilgard is experimenting with the cinchona at the University gardens, and shall feel much obliged if you can let me know the results. We have not yet made much progress in Southern Queensland with the cinchonas, but the prospects in Northern Queensland are very much brighter."

BRIEFS OF CORRESPONDENCE.

Japan Persimmons are fruiting this year on the Magnolia Place, near Yountville, Napa Co.

George Rich, of Sacramento, writes that quite a number of young Oaks from the foothills have been transplanted to the valley with complete success.

The Norfolk Island Pine does not seem to do well in the vicinity of Sacramento. It grows but slowly, and many of its branches drop off annually.

Our mountain Manzanita is of slow growth in the valleys, but young plants do reasonably well. Its natural home is on the dry and rocky ridges, where it is lovely in spring.

Our Yountville correspondent, whose previous card must have gone astray, asks whether the *Paulonia* is affected by frost. It is a hardy tree in all parts of the State, and can be recommended.

The red scale seems to be on the increase among the orange and lemon groves. A correspondent attributes it to the lack of moisture, saying that trees kept well mulched, and moist enough to grow well, are rarely affected. A solution of tobacco is recommended.

Egyptian corn has been a great success in the Sacramento Valley this year. It is much better than Prickly Comfrey for fodder. The seed is used for chickens, and the stalk and leaves for stock.

Mr. Blowers, of Woodland, writes that his grape crop of this year has been over 4,500 20-lb. boxes of Muscatel raisins, 100 boxes of Seedless Sultanias, 32 tons of choice shipping grapes, and 10 tons of grapes for vinegar, and similar purposes. Persons who visited his vineyards say that the crop was a marvelous one.

Editorial Department.

OUR PRIVATE CHAT.

This is the last number for 1879. It is a fitting time to chat with readers about the past and present. The publisher has elsewhere had sufficient to say about clubs and club terms, about prospectuses and business affairs. After awhile you, my dear readers, may look into those matters. Just now I want you all to myself a moment.

Let us imagine that the readers of the HORTICULTURIST are having a picnic in one of our sunlit, fern-haunted ravines, on some windless day when the air is translucent pearl, and that, having shaken hands all around, and having indulged sufficiently in garden gossip, you, my gentle constituency, should let me talk a moment. If I have the floor it is this which I feel moved to say:

Beloved citizens of the Republic of Flowers: It is now nearly Christmas time, when, according to the traditions of Saxon races, there should be Yule-logs, and indoor sports, but our California gives us endless bird-singing, waves of blossoms, and green grass, skies of Grecian blue, and hopes multitudinous. Therefore we should be the happiest picnickers to-day that ever sun shone upon. This year, which is nearly past, has brought work for nearly all of us, and yet we can see as we look back that the work brought its own comfort, day by day. We know more of plants; we love gardens better; we have a complete faith in the future California; we are better friends, you and I, and so the summer has been well spent. I feel, as I look across your faces, kind folk, young and old, that this has been a growing and a happy year for myself, and that your letters, your articles, and your appreciative words, have been the

continual evidence of your good-will. Often, as I have written, the thought of the homes and needs of the people has moved me strangely. I remember your hillside and valley and mountain gardens which I visited last summer. Never forget, or neglect them, for busy people, in this whirling world, have need of all the color and sweetness they can find. Persuade others, also, to plant gardens, and to make beautiful homes, for this is one of the very best ways in which to brighten the world of men and women. Sometime, I do not know when, I shall come to visit these gardens again, and I hope many more hereafter.

May the fairest of Christmas blessings rest on all the homes of our State—from the olives of San Diego, the palms of Ventura, the orange groves of Los Angeles, the rose gardens of Santa Barbara, to the fragrant woods of Navarro, the smoky mills of Humboldt, the snows and pines of Shasta, the white roofs of many a mountain village and busy town—from wide plains where plows break the new soil; from hillsides of vines and orchards; from green islands in the heart of the San Joaquin, near the roofs and spires of Stockton, to the settlers' cabins by the far off sources of streams which widen until they pass through the Golden Gate, and melt into the Pacific. And may the coming year deepen our friendship, widen our usefulness, and increase our knowledge of gardens, books, and people.

THE EDITOR.

LAYING OUT GARDENS.

At this season of the year people begin asking questions on this all-important subject. December is, over most of our State, devoted largely to work in the orchard, vineyard, and garden. It is easy enough, as the year draws to a close, to see how plants might be more

suitably arranged, and where others might be placed. All in all, it would be hard to find any more solid satisfaction in any department of horticulture than a hopeful and energetic person can have in his garden plans for this month.

But there are in this State many persons who have not hitherto had any definite garden plan, but who (it is with much pleasure we say it) have been led on, step by step, and gently persuaded into various floral investments, which have at last culminated in high resolves, and lofty ambitions. So they wish to lay out gardens, and are anxiously watching for plans, and asking their horticultural neighbors for notes, and they study every handsome place for miles about. It were well if a whole community might be wrought up occasionally in some such gentle excitement.

A letter comes to us from a friend, who asks about garden work, saying: "This is a hillside home. The house, of rough boards, is on the east slope, facing the ravine, and fifty feet above the stream and the road, which crosses at that point. We have never had a garden before, for it seemed too steep, but the soil is rich, and the slope is sunny."

In this case, as in many others, there is the possibility of a lovely cottage home. The garden will show for all it is worth on such a slope, and if water can be procured the battle is won. Terrace the garden plot to prevent the earth from slipping. Do this work gradually, as leisure permits, holding the earth up with walls of rock, which may be entirely hidden by vines. Cover the house with vines also, adding a few porches and projections to relieve the plain outlines. Plant a great many roses. Have a shady bed for pansies. Put daffodils, and other early bulbs, in

the sunniest place you can find. Dig out pockets on the hillside, even when you think shrubs and trees will not grow, and try them. And be sure to remember carnations, concerning which, however, you must watch the gophers. Terraced gardens in a mountain land are among the fairest achievements of home-loving men, so keep this ideal before you steadily.

Another letter came to us from a Colusa garden, not many days ago. The garden plot faces the north, and one, standing in the doorway, looks across the wide valley, dotted with white roofs, and growing blue and bluer toward the cloudy sources of the Sacramento. This is a garden which is much loved and cherished, and which we feel sure will grow more and more charming. It was, however, begun without much of a plan, and so we are now told that it has become "too much crowded, too badly mixed, and the walks not right." Then we get a glimpse of quite an ideal garden as the winter proceeds. "I like flowers in masses—a whole bed of roses for instance. We might have a bed of white flowers, such as tuberoses, or amaryllis, and this might contrast with a mass of pink or scarlet. I should like a large diamond bed of roses near the door, and a winding path to the front gate."

It is hard to describe a plan for a garden. We should like another autumn to give more pictures on the subject. In this case we have answered by letter, inclosing a number of plans, and now only aim at making a few general remarks on this business of laying out gardens. There must be wide paths, or half the comfort of a garden is gone. Annuals need massing, and so do spring bulbs. Shrubs and roses should be grouped. Herbaceous perennials appear best in mixed borders. The chief

end of a country flower garden is to furnish flowers in daily profusion. Carpet gardening may be tried in a few beds, and increased if found desirable. But one never tires of roses. Narrow flower beds, which can easily be reached from the walk, are usually the best. Every garden should have a summer house, hid in some leafy place, and covered with vines. A Grass Valley correspondent has also hinted that every garden ought to have a pond for water lilies. A circular bed devoted to foliage plants, such as Solanums and Centaureas, ought never to be forgotten. A sunny slope for Sedums, Abronias, and sun-loving plants, is charming. Bring out the capacity of every separate portion of the garden domain.

This whole subject is so interesting that we would much like to have more correspondence on ways of laying out gardens, and on the effects produced. It would be a pleasure to hear from a multitude of gardens, for there is wisdom in many counselors.

WINTER IRRIGATION.

One of the things in which we do most earnestly believe is winter irrigation. There are so many places in our State where floods of water, rich with the accumulated soil and decay of miles of mountain slopes and ravines, are wasted, seemingly without thought, and wholly without compunction. We remember channels of streams dry in summer which boom like the noise of an ocean night after night in rainy winters. If there were channels cut higher up in the mountains to take the water from these streams in times of flood, and spread it out over the valleys, and pasture lands, the fertilizing agents thus added to the soil would be of almost incalculable value. Another point gained would be that, by thus lessening

the pressure on the main channel, the danger of uncontrollable freshets would be much diminished.

Summer irrigation requires an abundance of water, either from a stream, spring, or flowing well, or else it involves a considerable expense in the way of raising water by steam, horsepower, or windmill. Its manifold advantages and untold possibilities are more than sufficient to pay for its cost in orchards, gardens, and shrubberies. But winter irrigation is never so expensive, and yet for field crops it is all-sufficient. If the floods which in winter pour down the wide, sandy channel of the Salinas River might be used on the valley about Chualar, Gonzales, and Soledad, the southern end of the Salinas Valley would soon be a garden. If it were possible to take the yellow floods of the rivers which flow from the mines—the Yuba, Bear, Feather, and others—and pour them over the dry uplands along the foot-hills, and on the hard, barren lowlands of some parts of the great Sacramento Valley, the mining debris question would soon begin to find a solution. And, in sober truth, problems of irrigation greater than these have been solved before now, by energetic races, and will again be solved if the toilers of California are only in earnest.

Whoever waits, hoping it will rain abundantly, may get caught in some seasons, and in many parts of the State there will be occasional failures which a little more moisture would have prevented. The time for winter irrigation is as soon as the water can be had. Lay the field off in blocks of varying size, trying to have each one level, and so that the water can be guided easily from one to another. Plow deeply around the limits, and throw the furrows together, so as to retain the water

some time. On slopes, plow long, winding furrows, as nearly level as may be, and finish with the spade. The long, heavy rubber boots which miners use are of great service during the actual work of irrigation.

PLANT TREES EARLY.

In those parts of our State where the November rains were sufficiently abundant to moisten the soil, tree planting is to be commended. If one visits the nurseries at this season all is a scene of activity, and of seeming confusion. There is more to do now, among the nurserymen, than at any other season of the year. The shrubs, shade trees, fruit trees, and various ornamentals are now being dug and "heeled in" for continuous sales, and shipments through the winter. Although we have found that tree-planting may be extended later in the spring than was formerly thought possible, yet trees doubtless thrive better, and make a larger growth next season, if planted as early as possible after the rains begin. Then, also, the man who buys his trees early in the season has a choice from a larger stock, and is more likely to obtain the kinds he wants.

The farmers of our northern coast counties usually send orders early, almost before trees can be dug in the valley nurseries. In our mountain regions the roads become impassable so soon that it is necessary for purchasers to have their trees shipped at as early a date as possible. Small family orchards are increasing very rapidly through Mendocino, Humboldt, Del Norte, and Siskiyou. For this fall planting, and for long shipments, hard-fibred, rather small trees are to be chosen. Some trees are too much irrigated during their growth to succeed well on dry land, for the wood becomes too soft,

and sappy. Well ripened wood and a multitude of roots are worth more than a large top and many leaves.

The soil should be well prepared for fruit trees, by plowing and cross-plowing, by thoroughly pulverizing it, and by digging the holes deep and wide. In planting, aim to just cover the collar of the tree, or the place where the root ends and the trunk begins. Keep weeds down, give thorough cultivation, and mulch during the summer if it is a dry season.

THE HORTICULTURAL SOCIETY.

The last meeting of the State Horticultural Society was well attended, and a number of new members signed the Constitution, and paid the requisite fees into the treasury. A permanent organization was effected, and the following officers were elected to serve for the ensuing year: President, Prof. E. W. Hilgard, of the University of California; Vice-President, John Lewellyn, of Napa; Secretary, E. W. Wickson, No. 414 Clay Street; Treasurer, G. P. Rixford; Board of Directors, W. B. West, Stockton; John Stentzel, Martinez; Charles H. Shinn, Niles; Dr. Behr, San Francisco; John Rock, San Jose.

The Constitution provides for standing committees on small Fruits; Orchard Fruits; Semi-tropic Fruits; Grapes and Grape Products; Flowers and Plants; Acclimatization; Vegetables; Botany; Insects and Diseases. Other important topics will be assigned to other committees as deemed desirable. A number of letters were received from fruit-growers, nurserymen, and horticulturists in various parts of the State, showing a hearty interest in the movement. The subject for discussion at the next meeting will be "Destructive Insects." Dr. Behr will open the dis-

cussion. Horticulturists are invited to send specimens of insects, and plants infected. It is expected that a discussion on some interesting topic will take place at every meeting hereafter. The HORTICULTURIST goes to press too soon to contain a report of the November meeting.

THE LAST MEETING OF THE SAN MATEO SOCIETY.—Mr. James Burns, of San Mateo, who has charge of Alvinza Hayward's extensive grounds, recently wrote us, inclosing reports of their flourishing organization. Concerning the last meeting he says: "The discussion on sub-tropical bedding was not written. Our Association is progressing well, and the members take a great interest in its success, and in our discussions." Mr. Burns expects to attend our State Horticultural Society. Our best wishes go with the gatherings of the San Mateo gardeners. They are engaged in a noble work. May they continue to prosper more and more each year.

THE HORTICULTURIST FOR 1880.—We hope all of our subscribers will renew, and begin clubs as early as possible. We are doing a work for the whole Pacific Coast, not only for the region about the bay, but for every hillside and valley. We expect to tell you of new and rare plants, of gardens, vineyards, orchards, conservatories, semi-tropical fruits, destructive and beneficial insects, and whatever else has to do with horticulture in its fullest meaning. You can not afford to be without the HORTICULTURIST a single month. Help us to make each number better than the last. Write to us often, and tell us about your gardening haps and mishaps. And, we desire once more to repeat, our friends will greatly help us by getting up clubs in each neighbor-

hood. We ought to have five subscribers at each post office in the State. We would urge this upon you as earnestly as possible, for if we mean to advance, this aid from our friends is all-important. Do not delay, but take hold at once.

ORNAMENTAL SOLANUMS.—Some of the Solanums have long been known as noble decorative plants, and we have seen them used with fine effect in a number of gardens on this Coast. In Paris more than sixty species are used for the decoration of the public parks. We illustrate three of the best varieties. *Solanum marginatum* is a large-foliaged species, with dark green leaves silvered on the under side. *Solanum pyracanthum* has fine, deeply cut leaves, set with bright orange spines, which also appear on the stem. The fruit of this species is handsome and abundant. *Solanum aculeatissimum* is somewhat similar to the preceding, but the leaves are much darker, and the abundant spines are deep purple. These ornamental Solanums require a rich, moist soil, and plenty of room. They are propagated from seeds and cuttings.

THE TORNELIA FRAGRANS.—This is a fine decorative plant of recent introduction. It was first illustrated in a German publication, and the habit of growth is well shown, together with the peculiar window-like openings in the leaves. Both this, and our plate of ornamental Solanums, are reproduced for us by the new process introduced on this coast by the California Photo-Engraving Company of this city.

SPECIMEN NUMBERS.—We will send specimen numbers free to those who wish to get up clubs, so that they will not soil their own numbers.

Editorial Notes.

DECIDUOUS TREES IN SAN FRANCISCO.—A writer in the *Gardener's Monthly*, for November, states that "in San Francisco evergreens are the only trees possible, to the total exclusion of deciduous ones." This is unqualified language, and does not agree with the facts of the case. There are parts of the city where deciduous trees have not done well, but we can now call to mind a number of gardens where locusts, walnuts, maples, ashes, and others of our common deciduous trees have thriven. There is, for instance, a row of large locust trees on the opposite side of the street from our publisher's office. A garden on Rincon hill used to have thrifty apple and pear trees in it, before it was ruined by the Second Street cut, and we presume there are other gardens in which fruit has been successfully grown. San Francisco does not deserve such a bad reputation.

PLANTS FOR CHRISTMAS GIFTS.—This is the season of happy remembrances. There are treasured secrets in many a home circle, and much visible toil in colored worsteds and fancy-work, the fruit whereof ripens on the twenty-fifth of December. Now while Christmas thoughts fill the heart, let us plead for large gifts of plants, flowers, and bulbs. Give trees to the school district, and see that the trustees plant them. Take flowers to the hospital, to the sick neighbor, to whoever is sad or weary. Have a box of assorted spring bulbs for the little brother who has a garden corner, and works spasmodically therein. Potted plants in bloom are better gifts, in essence and in truth, than a wilderness of penwipers.

THE LILIES OF CALIFORNIA.—Mr. Sereno Watson, of the Harvard Herbarium, has recently been making a revision of the Liliaceæ, and according to Vick's Monthly he discovers eight species of our California lilies. *L. Washingtonum*, having white flowers changing to purplish; *L. rubescens*, at first supposed to be only a variety of *Washingtonum*; *L. Parryi*, with pale yellow flowers; *L. Humboldtii*, with reddish-orange flowers; also, of somewhat similar color, *L. pardalinum*; *L. maritimum*, which has been separated from *L. parvum*; *L. Columbianum*, previously thought a species of *L. Humboldtii*, and *L. parvum*. These are the conclusions with reference to the lilies of California which the forthcoming volume of the Botany of California will present. The *Lilium Parryi*, of which we have spoken, is a very handsome lily, and we are indebted to Mr. Lemmon for some choice specimens. We think it will be an acquisition to our valley gardens.

SCILLA FRASERI.—We noticed from Case's Botanical Index, that this is the latest name of our *Camassia esculentum*, but it is doubtful whether it can yet claim a secure title. It was first called *Phalangium esculentum* by Nuttall; Ker changed this to

Scilla esculentum; Lindley altered it to *Camassia esculentum*; Torrey called it *Camassia Fraseri*; and finally Gray terms it *Scilla Fraseri*. The flowers are of a pale blue color, borne in an elongated raceme, on stalks from one to two feet high, during May. Sepals widely spreading. Leaves long and linear. This is one of the native food plants of the Indians, and we refer our readers to the article on the subject in the November HORTICULTURIST.

JAPANESE MAPLES.—Mr. James Hogg, who has done so much to increase our knowledge of the trees and plants of Japan, writes at length concerning these beautiful trees, in a recent number of the *Rural New Yorker*. At this season of the year, when so many are looking about them to find something suitable to plant out in shrubbery or on choice lawns, we would mention the Japan Maples. The genus *Acer* (or maples) embraces a large number of varieties, of wide distribution. Sevalier and Franchet enumerate twenty species known to Japan, and three more have since been added. The most of garden varieties, says Mr. Hogg, have been derived from *Acer palmatum* of Thunberg, called, by Dr. Siebold, *A. polymorphum*, on account of its great tendency to vary in its foliage. *A. septemlobum* and *A. dissectum* are varieties of this species, and there are many subdivisions. Some other garden varieties are derived from *A. trifidum*. The brilliant Japanese Maples have been hard to propagate. They are of delicate and slow growth, and must be grafted on good stock. They do not succeed on the American species, but must be grafted on the Japanese type species. The method preferred in Japan is by inarching.

LAWN MAKING.—At this season the important question with many is, how to secure a good lawn this winter, for, as we all know, nothing else adds so much to the beauty of a place, and nothing is better worth a little expense and trouble. A poor lawn, however, is a mournful, spotted, yellow and brown delusion all summer. In order to make the lawn satisfactory, begin work before the heavy rains. Level the spot intended for a lawn, and dig it eighteen or twenty inches deep. If the ground is poor, manure may be used. Wait till the rains settle the surface, then stir it and level it once more, sow the seed, raking it over, and covering it with a quarter of an inch of fine manure. Keep it moist if the weather turns dry. Pull up weeds as soon as they appear. Cut the grass once a week, and, if it does not grow well, give it a top dressing of bone dust, well decayed manure and wood ashes. The Kentucky Blue Grass appears to be the most useful variety for an open lawn. The Australian rye grass is good for use in shady places. *Cal. Hort.*

EUCALYPTOGRAPHIA.—Under this title, we learn from the *Queenslander*, Baron Von Mueller is issuing a work on the gum trees of Australia. There is

to be a finely executed engraving of each species, showing fruit, flower, leaf at different stages, etc. The accompanying letter-press contains, besides a description of the tree, much valuable scientific and useful information. The work is being published in parts, and must rank as a most valuable contribution to botany from this indefatigable student and writer.

THE NORTHWESTERN HORTICULTURAL SOCIETY.—This young and thriving society, which is the State Horticultural Society of Oregon, met at Portland in that State on the 15th of October. President Luelling exhibited a branch of Japan Persimmon with fruit upon it. The chief question before the society was with regard to the so-called silver prune of Oregon, which has been claimed as a new variety, and the best for drying. The committee on that subject found that the so-called silver prune was in reality the Coe's Golden Drop, an old and superior variety. It is a valuable fruit for drying, and deserves to be largely planted, but we regret that it should ever have been disseminated as a new variety. The fruit growers of California, some of whom have been making inquiries about the "silver prune," will please take notice that the dried prune which our Oregon neighbors put up so well is the fine old Coe's Golden.

PROF. BURRILL ON PEACH CURL.—Prof. Burrill, of Illinois, lately read a paper on curl in the peach, before the Horticultural Society of that State, and it has just been published in the *Gardener's Monthly*. The article is interesting and able, well defining the parasitic fungus, *Ascomyces deformans*, which research has proved to be the cause of the disease. But we notice the following statements: "Sometimes particular branches alone showed the destroyer's attack;" "often certain trees were affected in the midst of healthy ones of the same variety." Our observation and experience have been to the contrary. Some varieties curl and others do not. A tree which curls is attacked all over, and all of the same variety will suffer. A Crawford tree will stand unharmed in the midst of a whole orchard of Early Strawberry or Chinese Cling. One of the land-marks of the whole business is, in our opinion, the fact that there is such a difference between varieties as regards susceptibility, to leaf-curl. We cordially indorse what Prof. Burrill says about the disease being in the bud, and in the young bark of the diseased twigs; but when close pruning of the limbs of the last season's growth is offered as a panacea, we can only state that we have seen large trees of varieties subject to curl-leaf, cut down to wit: in a foot of the ground, thus removing all the young wood, but the earliest buds and leaves on the first sprout which appeared were affected with the same disease. We offer it as a subject worth the careful experiment of our orchardists. (a) Can the fungus threads of incipient curl-leaf be detected on the branches? (b) Does close pruning offer a practical remedy?

THE TULIP MANIA.—The *Deutsche Gartner-Zeitung* says, that last December two houses in the chief street of Hoorn, near Amsterdam, were sold to be pulled down, which had been bought, between 1634 and 1637, for the price of three tulip bulbs! An inscribed stone, on the spot, commemorates the fact.

DESTRUCTION OF EARTH WORMS.—M. Adam, gardener at Villeneuve sur Yonne, says *L'Illustration Horticole*, had a palm tree in a box; there were a great many worms in the earth, and he tried watering it with white lime-water; to his surprise, the worms at once came to the surface, wriggled, and died. He did the same to seed-plots of cinerarias, calceolarias, primiverias, etc. After several waterings the worms were gone. Salt water had as good results, but was not so good for the plants. You can put the seeds in earthen pans, putting a little lime at the bottom, which the worms will not try to pass.

DESTRUCTION OF SNAILS.—An amateur communicates to the Journal of the Society of Horticulture of Orleans and the Loire his success in destroying the little gray snail which hurt his *lunica saxifraga* and *alsine verna*. He tried bran, then quick-lime, with small success, and at last spread his walks and borders with a thin layer of saw-dust, or fine-sifted ashes, and found that this completely destroyed the snails.—*L'Illustration Horticole*.

DISEASE IN FLORIDA ORANGE GROVES.—The orange growers of Florida have been troubled with a disease on their trees, called, for want of a better term, "Die-back," and writers in the Florida *Agriculturist* are discussing its causes and remedy. The first cause appears to be too deep planting; the second appears to be the setting of trees in too wet soil; the third is in the application of too strong and fresh manure; the fourth is a small spider which punctures the shoots and seems to poison the sap.

TREE FERNS FOR OUT-DOOR CULTURE.—We have all, probably, seen, at one time or another, the tree ferns growing luxuriantly in a greenhouse or conservatory, but no one has yet tried them in the garden. A gentleman in Scotland has planted a number and they have survived the winters there. He planted *Dicksonia Antarctica*, common in Tasmania, South Australia, and New Zealand. It is called by the Maoris "Wekiponga;" *Dicksonia squarrosa*, of New Zealand, native name "Weki;" also, *Cyathea dealbata*, the noble silver tree fern or "ponga" of the Maoris; also, the *Cyathea medullaris*, or black tree fern, and the "korau" of the natives. All of these endured the Scottish winter, the *Dicksonias*, in particular, appearing to thrive. Now let us try the tree ferns, giving them a moist location.

CLAY SOILS FOR GARDENS.—A heavy clay soil, although it may be enriched with manure, is hard to fit for gardening purposes, for it is too heavy, cold,

and sticky, and our frosts are not sufficient to break and loosen it. If there is a choice, we would avoid clay soil for gardening. On small pieces of ground, sharp sand plowed in effects a change. But the quantity required is enormous. Where wood is abundant, the ground may be trenched, and, by filling each trench with logs, and burning them, a permanently beneficial effect is produced. Cover the burning logs with clay, leaving openings for ventilation. Of course this is not practicable on a large scale.

PHYLLOXERA-PROOF GRAPEVINES.—Our viniculturists are discovering that the Phylloxera is a great enemy, and the experiments in Sonoma County so far have failed to destroy the insect. Julius Dussier, of Sonoma Valley, has planted several acres of the Taylor grape of Missouri, a native variety, and has grafted them with foreign varieties. So far they have been phylloxera proof. As we suggested in a recent number, the wild grape vines common on this coast are worth a trial.

THE CAMBRIDGE BOTANIC GARDENS.—These gardens, in which a great deal of botanical study is constantly carried on, contain about 3,000 species of hardy plants, and 2,000 species of tender plants in greenhouses. There are a hundred species of cacti bedded out, hardy orchids, aquatic plants, etc. Mr. Falconer is in charge. We hope that before many years there will be an amply-endowed Botanic Garden in this State, at some point where there is rich soil, and frostless temperature. It could be made the marvel of the world.

THE MASS. HORTICULTURAL SOCIETY.—This honored society recently celebrated its semi-centennial anniversary. Its plant and flower display was the best ever made. The best specimen plant was *Sphenogyne latifolia*. *Anthurium crystallinum*, a plant with dark, velvety leaves, veined with white, was much admired. Fancy *Caladiums* and tuberous *Begonias* were in great variety.

PALMETTOES.—We ought to do more with hardy palms. The Palmettoes of the Southern States might be tried at slight expense, as they grow readily from seeds. *Sabal palmetto* and *S. Adansoni* are tall varieties; *S. serrulata* is the dwarf species.

A GRAPE-KEEPING STORY.—There is a most unbelievable story which has been floating about in the country papers for some months past. It seems to us as if it were time to hold it up to the scorn of the horticultural world. We quote as follows: "It is said that the Chinese keep grapes fresh for a long time by cutting a hole in a pumpkin, cleaning it out, and, after filling it with ripe fruit, replacing the cover." Now, any one who "knows pumpkins," knows beyond cavil, that if cut they soon begin to decay, and the grapes would get the worst of it. That speculation is entirely too imaginary.

Pomological Notes.

COE'S LATE RED PLUM.—Some handsome looking packages of this plum, which we saw at Drake & Emerson's early in November, consigned from Tarlton's orchards in San Jose, reminded us that this is the latest plum which appears in our markets. It is a large roundish plum, later than the *Imperatrice*, but hardly of as good quality. It has sold this year at about two dollars per box of thirty pounds.

THE HOOVER APPLE.—This is perhaps the handsomest apple grown on this coast, as far as richness of color is concerned. In size it is large, to very large, and a rich red, deepening into purplish red, shaded and flecked. Of course it sells well, as our California fruit buyers are notorious for considering the looks merely. It is of very poor quality, under most circumstances, the skin being thick and tough, and the flesh rather tasteless, but, since it sells well, it will of course be grown by our orchardists. Heald & Woodbury, Napa, sent the finest Hoovers to market this year.

CORNICHON GRAPES.—This variety of grape has been in the State a great many years, perhaps the first vines being planted by the West Bros. at Stockton, but it has never become popular with grape growers on account of its being such a poor bearer. Some years, we are informed, it will not set at all. Still, the price which it brings in our markets is so great, being often several times as high as ordinary varieties, that it would be advisable to test it thoroughly in different parts of the State, so as to see whether some place where it would yield well might not be found.

The Cornichon grape has a very large berry, of purplish color, oval in shape, and rich and sweet. It bears transportation well, and is a popular table grape, wherever known, but very few boxes come to market from any direction. Viniculturists might try the effect of different methods of pruning in causing Cornichon vines to bear heavily. Tying the canes up to a stake, and letting them trail down, is recommended as inducing a bearing habit in some varieties of grapes.

THE RAMBO APPLE IN CALIFORNIA.—We have lately seen some statements to the effect that the Rambo is a desirable apple for our orchardists. That is very largely a question of surroundings, and of climatic influences. The Rambo varies exceedingly in different parts of our State. It is not a good or profitable apple in the valleys of California. It does not pay to ship, and is only good for feeding to the pigs. Being an early fall apple in those localities, it does not keep long enough to be of much value for family use, and it is liable to water-rot at the core, and also to become blotched on the skin. It is such a profuse bearer that thinning is too expensive a

task. Its habit of growth is also much against it. For valley culture it can not be recommended in either size, color, quality, or marketing. But the Rambo of our mountain regions of the Coast Range or Sierras is seemingly a different apple, though only the result of more favorable conditions under which to develop. It is larger and better than the valley apple, though hardly up to the standard of the mountain Baldwins and Spitzzenbergs. It is a good cider apple wherever grown.

BRIGGS' VINEYARD.—Mr. Geo. Briggs, of Davisville, has been busy for some three months past in picking and curing his grapes, which are now about ready for shipment. He has employed 130 men in this season's work. His vineyard covers 400 acres of rich bottom land, on the northern verge of Solano County, and it is entirely devoted to the raisin grape. When the grapes are fully ripe they are gathered, and placed on trays of thin boards, two by three feet square. These trays are set in the spaces between the vines, and are tilted towards the sun by a clod of earth placed under one side. It is estimated that the raisin crop of this vineyard will reach a total of 35,000 boxes this season. Each box holds twenty pounds. The vineyard is not yet in full bearing, and we may expect to see its yield doubled in the course of a few years.

CANNED MEXICAN PINEAPPLES.—Several of our San Francisco firms have canning factories in Acapulco, where they can pineapples and ship them to various markets. The fresh pineapples are not very popular in San Francisco, there being so much other fruit, but the canned ones preserve the flavor very much better, only fully ripe fruit being taken. The canning of Mexican fruit ought to become quite an industry.

DRY ROT IN APPLES.—Our orchards near the bay show this disease more and more. It attacks a few particular kinds almost exclusively, and is not only fatal to the good looks of a box of fruit, but much lessens its eating qualities, the bitter taste of the brown and black spots making them undesirable. Three different shipments from growers in San Jose and Santa Clara, which we noticed lately, were very much spotted. They were the Baldwin and Wagner, the latter of which is usually sound.

TRACES OF THE BOMBYCOIDES.—The insect which ravages among Dr. Gally's fruit is at work elsewhere. On a recent visit to Watsonville the genial Doctor showed us how to recognize its traces and effects, since when we have kept a sharp lookout. During half a day spent among the fruit dealers of this city we noticed the work of the *Bombycoides* upon both apples and pears, lessening their value for market fruit. This insect begins work when in the larvæ state, on the young apple, and eat their way around a portion of its circumference. If they strike

towards the centre, and cut the core, the apple falls off; if they merely go about a portion of the surface the apple lives and grows, but is onesided when it arrives at maturity, and has an ugly, warty, brown scar on one side or near the calyx end. This seriously injures the fruit for market. As we have said, both apples and pears are attacked.

SANTA CRUZ MOUNTAIN GRAPES.—On the first of November last, there were, according to a report in the *Mercury*, grapes of the following varieties in Miller & Son's Vineyard: White Muscat, Rose of Peru, Hamburg Muscat, Chile Rose, Purple Damascus, White Malaga, Emperor, Black Malvoise, Gordo Blanca, White and Purple Cornichon, White Nice, Verdell, and others. Early Madeline, Sweet Water, Black Hamburg, and others are past.

THE DWARF SERVICE BERRY.—This choice berry (*Amelanchier Canadensis*), is said, by E. Y. Teas, in the *Botanical Index*, to be extremely attractive and of superior value. The berries, which ripen in June, are a full half-inch in diameter, and possess a very agreeable, sprightly flavor, with a delightful perfume. They are of a purplish-red, with a white bloom.

THE HUDDLESTON'S FAVORITE STRAWBERRY.—This is a new variety, in the hands of E. Y. Teas, Dunreith, Indiana, and has proved a valuable and distinct berry, a vigorous grower, and a good market variety, wherever tried. The berry is of the very largest size, bright color, and firm. The flavor is rich and spicy, and the plant appears to be very productive.

PEACHES AT RIVERSIDE.—A friend at Riverside writes that he "has had peaches continually from June 5th to Oct. 25th, and Bilyeu's late October is just beginning to ripen."

THE SONOMA SEEDLING.—At the October meeting of the State Horticultural Society, Mr. O. B. Shaw, of Sonoma County, exhibited a number of large specimens of this admirable apple, known otherwise as the Cook's Seedling. It is a winter apple of good flavor, and large size. Its high color is greatly in its favor. Nurserymen, we learn, are beginning to keep it in stock as a variety of standard merit.

JAPANESE PEARS.—Two of the four varieties of Japanese Pears, brought to Europe by Von Siebold, have fruited at Leyden. These are probably, says the *Illustration Horticole*, the first that have fruited in Europe. *L'Illustration* says that, in size and taste, they fall below Von Siebold's description of the fruit as known in Japan, and hopes that the other two varieties, Milsado and Daimyo, may be more satisfactory, but adds that, at all events, the fruit is of great scientific interest and worth attention for hybridizing with our pears.

New & Desirable Plants.

[We shall glean from our exchanges and correspondence, notes on plants either new, or of promise in our climate. Our nurserymen are invited to send notes on any interesting plants received.]

CLIVIA MINIATA.—*L'Illustration Horticole* gives a handsome plate of this new plant, belonging to the Amaryllidæ. It was received by Messrs. Backhouse, horticulturists at York, Eng., from Andrew Steadman, a merchant at the Cape of Good Hope; flowered first in 1854, was displayed the same year, made quite a sensation, and received a medal from the Royal Society. It was at first considered an Amaryllis, but is now settled to be a *Clivia* (Lindley), a genus recently named. The varieties of *Clivia Miniata* are already numerous. The one in question, var. *Lindeni*, has a splendid cluster of vermilion-colored flowers, borne erect at the end of the stalk, amaryllis-like, the whole cluster being well-nigh a foot in diameter. M. W. S.

NEW PLANTS.—It has occurred to us that we probably see many more catalogues than our readers do, and that possibly we can in no way be more useful to them than by naming some of the new roses and other choice plants which are offered at the East by some of our best nurserymen:

Of roses we would mention as among the latest, Duchess of Edinburgh, deep crimson; Perle de Jardins, deep canary yellow; Perle de Lyon, deep yellow; Marie Guillot, white, very slightly tinted yellow; La Naunce, tea-scented, salmon, shaded with coppery yellow; Shirley Hibberd, light yellow; Souvenir de Pernet, fragrant, soft rosy carmine, shaded and tinted with yellow; Annie Oliver, creamy blush, tinged and edged with silver rose; Letty Coles, flesh colored; Niphetos, pure white; Reine Marie Henriette, climbing rose, cerise red; La Princesse Vera, color creamy white, outer petals copper yellow; Comtesse de Panisse, tea rose, copper color, shaded with violet; Abbe Roustan, flesh white, tinted with violet, a tea rose; Lily Mestchersky, a noisette climbing rose, color violet red; Madam Maria Verdier, color bright satin rose; Mabel Morrison, pure white, very delicately flushed with pink; Madame Welch, outside petals light yellow, the centre dark orange, often shaded reddish copper; Queen of Bedders, rich glowing crimson. We might extend the list, but wish to give some of the novelties among other kinds of flowers.

Of Pelargoniums we see offered, the Mrs. John Saul, a fringed pelargonium, color glowing vermilion, light centre and light margin to petals; Beauty of Oxtou, dark maroon, with white margin; Captain Raikes, rich crimson, blush white margin; Striata Elegans, magenta rose, flaked or barred with blue mauve, other petals with black feather-like margins. We see dwarf pelargoniums offered, said to grow only ten or twelve inches high; of these are the Comodore Nutt and Cambridge Pet.

The list of Zonale Geraniums is endless, and we will only mention among the new ones Charles H. Ellwanger, Snowball, M. Buchler, La Constitution, Eugene Baudoin, President Wilder, Dawn of Day, Jealousy, Anna Montel, and New Life.

We see a climbing *Oxalis* offered, said to grow several feet high, has yellow flowers; a new *Poinsetta* (*P. pulcherrima plena*), said to be an improvement on the old because the scarlet bracts are more abundant, and it stays longer in bloom.

Of Fuchsias, First of the Day, Swanley Gem, Rainbow (has variegated leaves), Gem of Ipswich, Mrs. S. M. Thomas, and Fuchsia *Racemosa*.

Mackaya Bella; this is a comparatively new plant that can now be procured at the East, and which is without doubt desirable.

Tabernaemontana Camassa has flowers like the Cape Jasmine, but is said to be more easily managed, and a profuse bloomer. The *Doryant es Palmeri*, or Queensland Lily, must be very desirable, has flowers like the *Vallota purpurea* in size and form, and of a rich crimson with white centre.

Of foliage plants we see offered as new or not yet common, *Anthurium Warocqueanum*, an aroid from New Guinea, with leaves from 24 to 30 inches long, and only 7 or 8 inches wide. *Acalypha Macafeana*, a very highly colored foliage plant. *Bertolonia Van Houttei*, leaves rich olive velvet ground color, with cross bars and dots of magenta red. *Phyllotænum Lindeni*, an aroid from New Granada, has leaves of a light glossy green, with cross bars and midrib of white. *Dracæna Goldiana* is a native of Western Africa and has cordate-ovate acuminate leaves, yellowish green, crossed and banded with dark green and silver grey in alternate stripes. The back of the leaves purple. *Phyllanthus Rosea-pictum*, a plant having great variety in the coloring of the leaves on the same plant, some being light cream color, some crimson, some dark bronzy hue, shaded with crimson, some dark green with spots of rose color, others combining all these. There are also to be had many varieties of the *Alocasias*, with leaves showing great variety of coloring. *Anthurium Scherzerianum* has large scarlet flowers at all seasons; each flower remains in bloom two or three months.

Of *Coleus* some of the newest are Exquisite, Fascination, Garnet, Geo. Bunyard, Kentish Fire, and Multicolor.

The new tuberous rooted *Begonias* are certainly very desirable, and *Frœbelii*, White Queen, Eldorado, Rebeus, M. Marcotte, Pearcei, and Sedeni, are single; while *Argus*, *Glorie de Nancy*, *Leomeini*, *President Burelle*, and *Salmonia Plena* are double. The *Begonia Coccinea* (*corallina*) is of shrubby growth, and the *B. Glaucomphylla Scandens*, is a large-flowered, climbing or trailing variety.

The *Campsidium filicifolium* is a vine with fern-like leaves. *Crawfordia Japonica* (climbing gentian) is a hardy plant that will grow to the height of six feet, has deep blue flowers.

Of *Bouvardias*, we find among the newer varieties,

Candadissima (white), Leiantha (dazzling scarlet), Lady Hyslop (pink), Hendersonii (waxy flesh), Jasminoides Longipetala (white), and Laura (pink).

Of Abutilons, the Darwinii Tessellata is a variety having variegated leaves and the flowers open like a parasol, and the Roseum Superbum has flowers of a rich rose color veined with pink.

Of Aquilegias—A. Chrysanth, yellow; A. Chrysanthæa Cærulea, blue; and A. Wittmaniana, purplish blue.

Of Amaryllis—A. Artemesia, white with vermilion stripes; Etoile, yellow on white ground; Phœbe, white striped with carmine rose.

Of Clematis we see offered, John Gould Veitch, double, blue; Countess of Lovelace, double, bluish lilac; Excelsior, double, dark mauve; Duke of Edinburgh, single, very large, rich violet purple; Fair Rosamond, white, with wine red bar on each petal. We also see a large variety of Gesnerias offered.

Of Dahlias and Gladioli, of Chrysanthemums, of Carnations, and Hibiscus Sinensis and Perennial Phlox, the new varieties are endless.

We wish to have it understood that what we mean by *new* are varieties that are not yet common. We have confined ourselves carefully to those varieties that are actually in the market and can be procured. We might extend the list had we room, but think we have put down enough to show our readers that there are many floral treasures to be had. In each list we have selected varieties that are as dissimilar as possible.

Reviews and Exchanges.

[All books on subjects in any way connected with horticulture will be reviewed in this department. Publishers are requested to state the price of each book sent.]

FERNS OF KENTUCKY. By John Williamson. Printed by Morton & Co., Louisville, Ky. Price \$2.

The study of ferns is one of those things which follows and blesses a person; it is a rapture and a benediction; it is a healthy and sensible pursuit which takes one into cool places, through dear and fragrant woods, up heights where breezes linger, and waves of sunlight break on mossy ledges. Who shall rightly put into language the endless witchery of ferns, the gracious air of refinement, the softly uncoiling fronds? We must find a new blossom language before it can be told. But, in this volume before us, the author has shown rare love and knowledge of the fern-world, and he has called to his aid the magic needle of the etcher. Mr. John Williamson, of Louisville, is, from all we can gather, a young mechanic of that city, who has used his spare time, as this book shows, to good purpose; has lived much with nature and unites the poet's imagination, the artist's eye for form, and the minute, painstaking care of one who knows science. Some sixty varieties of ferns are described and illustrated by full-page etchings made by Mr. Williamson. The structure,

ure, fertilization, classification, and indeed much of the history and surroundings of each species, is fully shown. This is an earlier work than the one mentioned by Prof. Davenport in our last number.

LOCUSTS AND WILD HONEY. By John Burroughs.

Houghton, Osgood & Co., of Boston, sent us this book to review, and we read it, not as a task, but as mere pleasure. It is fun to read wise and wood-loving Thoreau, summer-gardening Warner, and Hawthorne's old-fashioned glimpses, as, for instance, that of the garden in "The Dolliver Romance." John Burroughs at his best is not quite the peer of these, but he is very nice, nevertheless, and if he ever comes to California we should like to take a wandering journey with him for company. He wrote "Wake Robin," and "Birds and Poets," both of which we read long ago, and remember as one remembers a fairy tale told by twilight—a story of singing woods, and of shy flowers breathing faintly, and trying to speak. We know, as we read John Burroughs' books, that he was a country boy, for he tells us that on every page, and indeed we might have guessed it without his telling, for to have passed one's childhood among rural scenes is worth more to a writer than we have time to explain. Then also, there are, on every page, either bees buzzing, or boys hunting berries, or the fragrance of dewy meads, or the trill, chirp, and twitter of multitudinous birds. One chapter is of bees, and one about eyes (sharp ones), and then rain, trout, strawberries, and woodland beds of boughs, are chatted about. But as we said, bees, birds, boy, and berries, predominate, and give the book its color and character. The art of writing lovely outdoor sketches is rare enough. Avery and Bartlett used to do it to perfection in the pages of the dear *Overland*, which we have so missed, and no one since has quite equaled their loving interpretation of the birds, woods, flowers, and atmosphere of California. This sort of outdoor work is the type of healthy, observant, enjoyable writing, and we respect all who do it well.

FIRST PRINCIPLES OF HOUSEHOLD MANAGEMENT AND COOKERY. Maria Parloa. 133 pages.

This text book of cookery for schools and families is intended "to spread a knowledge of the common things of everyday life among all the people." It treats of the air we breathe, the house we live in, and the water we use; of house work, the human body, and classifications of food. There are chapters on fish, vegetables, fruits, bread, condiments, spices, flavors, and stimulants. This closes the household management department. Then follows a series of twelve lessons in cookery, the last two of which are devoted to the sick room, and the book closes with remarks on digestion.

We came to the conclusion long ago, that good, plain, healthy, well cooked food has more to do with health, happiness, and success in life than any other single element of our surroundings. It is our un-

shaken belief that a continuous diet of bacon and hot biscuit would go far towards destroying the genius of even a Shakespeare. Educated people give more and more attention to the quality and preparation of their food. They know that the whole human system is a complex and most delicate affair, and that the fibre and direction of one's thoughts are subject to physical influences. If we would be at our best we must heed these things. So we give this little book a cordial endorsement, and wish it many welcomes among the wives and mothers of America.

The *Aquarium*. Hugo Mulertt, 506 Race Street, Cincinnati, deserves credit for this little monthly sheet, which he has enlarged with the October issue.

The *Florida Agriculturist*, DeLand, Volusia Co., Florida. This valuable weekly, the best agricultural publication of the Southern States, has recently been reprinting an extensive series of articles on the Banana. Each number devotes considerable space to the citrus family.

Vick's Illustrated Monthly, Rochester, N.Y. The October number of this popular monthly contains a colored plate of tulips, and bits of correspondence from half the world over. Here, also, is a literary color and finish, for about flower-talk there need be nothing dull.

The *Canadian Horticulturist*, St. Catherine's, Ontario. We never fail to find something interesting in this monthly. They are forming a botanic society in that vicinity. Wm. Saunders, a noted horticulturist and entomologist of Canada, gives a series of notes of a recent journey through the United States.

The *Southern California Horticulturist*, for October, was largely devoted to reports from different sections of the southern counties. Some further lemon tests have been made. The Olivea lemon is ahead of the Lisbon, as regards the amount of citric acid, but the Genoa lemon, grown by W. S. Chapman of San Gabriel, yields over twenty per cent. more citric acid than does the Olivea.

The *Florist and Pomologist* for October, published at 23 Paternoster Row, London, has two colored plates, one of *Camellia ninfæ egeria*, a new double white of Italian origin, and superior to the old double white; the other of the Nectarine peach, a variety originated by Mr. Rivers from the pit of a Grand Noir Nectarine. This is an enjoyable number, and we quote elsewhere from its pages.

The *Rural New Yorker*, 78 Duane Street, N. Y. Some weeks ago a friendly nurseryman wrote us a very complimentary letter, and took occasion to gossip about a lot of "you horticultural writers." (This means "you literary fellows wot writes about plants, etc.") We are not going to tell all he said.

But he wound up with this: The *Rural New Yorker* "gets better and better." Now that is what we were thinking ourselves.

The *American Agriculturist*, Orange Judd Company, N. Y. We think that persons who begin to read this affair, never like to give it up afterwards. It occupies, and completely fills, a field of its own. Now this is the way we read the *Agriculturist*: First we find the "Basket Items" and read the most of them; then we look about in the middle where there is usually a sort of botanical page; then we look at the pictures. And we are hoping some day to see more letters from "The Pines."

The *Botanical Index*, for October, has a valuable article on the Iris family, one of wide distribution, and great beauty. "The flower of the Iris, under the name of *Fleur-de-lis*, was the royal emblem of France during the reign of the old kings." In this article, the American and European forms are considered, being water plants and approaching in structure the true Water Lilies, and therefore properly finding place in a series of articles on aquatic plants. There are, in America, eight well defined species of Iris.

The *Horticultural Record*. This is a bright weekly, published at No. 317 Strand, London. The editor, Mr. Wm. Earley, has an unusual sense of the artistic and literary side of our beloved pursuit, horticulture, and he makes a journal which one studies with pleasure. Indeed, when one comes to think of it, we, who write of plants, of plant culture, of woods, and wild flowers, and of all the living world of vegetation, ought to be very close to the heart of nature, and we ought to live in a sort of singing land, happy and busy all our lives, and supremely unenvious of other men's pursuits.

The *Popular Science Monthly*, for November, reaches high-tide mark. The first paper is an admirable resumé of recent investigations concerning the sun and solar heat. Prof. Crookes begins a series of articles on radiant and highly rarefied matter. Major Powell continues his Mythological Philosophy; and Lieut. Lyons presents the first of several papers on Ocean Meteorology. Prof. John Le Conte, of the University of California, continues an able article on Mars and his Moons, synthesizing former investigations, and considering various problems connected with the rotation periods of the moons, and the ellipticity of Mars itself. A sketch of the life of Dr. Asa Fitch, the noted entomologist, ought to encourage every young student to press forward. Persistence—endless persistence, is the secret of whatever real success men win. Study—hard study, well-directed hard study, is superior to accident and difficulty. And that is the lesson of Dr. Fitch's life.

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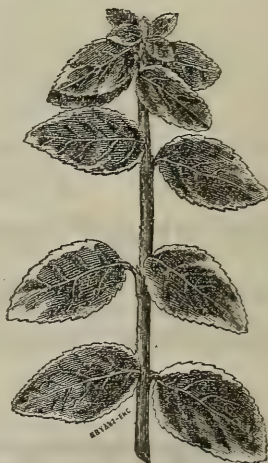
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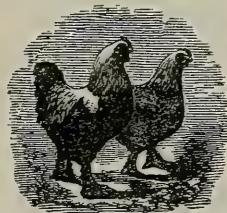
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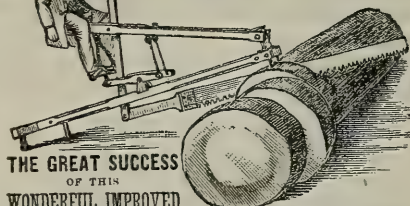
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8 Abutilons, or 4 Azaleas, or 6 Oleanders, or 12 Stone Begonias, or 4 Camellias, or 12 Centaureas, [crops], 2 Caladiums [fancy], or 8 Carnations [monthly], 12 Chrysanthemums, or 12 Coleus, or 4 Marantas, 4 Pinks, or 6 Hibiscus, or 12 white-leaved plants, 12 Dahlias, or 5 Dianthus, or 3 Cactus, or 20 Gladiolus, 8 Ferns, or 8 Mosses, or 8 Fuchsias, or 8 Phloxes, 8 Geraniums Zonale, or 8 Dble, or 8 Scented, or 10 Silver Geraniums Fancy, or 8 Variegated, or 8 Ivy-leaved, 4 Gloxinias, or 8 Snap Dragons, or 8 Tuberoses [Pearl], 4 Grape Vines, or 4 Honeysuckles, or 4 Hardy Shrubs, 8 Heliotropes, or 8 Lantanas, or 8 Petunias [double], 12 Pansies [new German], or 8 Salvias, or 8 Primulas, 12 Roses [Tea monthly], or 12 Hardy Hyb., or 12 Climbing, 12 Basket Plants, or 8 Daisies, or 6 har. Climbing Plants, 12 Scarcer Bedding, or 12 Scarcer Greenhouse Plants, 12 Verbenas, or 12 Bloated Petunias, or 6 Cannas, 25 varieties of Flower, or 20 varieties of Vegetable Seeds, or by EXPRESS, buyer to pay charges:

Any 3 collections for \$2; 5 for \$3; 9 for \$5; 12 for \$6; 14 for \$7; 18 for \$10; or the full collection of 500 varieties of Plants and Seeds—sufficient to stock a greenhouse and garden—for \$25, to which our book "Gardening for Pleasure" and Catalogue [value \$1.75] will be added.

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First Class, 1-year old trees, by express, each.....	\$1 00
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Second Class, 1-year old trees, by express, per ten....	5 00
In Bud, by mail, each.....	50
In Bud, by mail, per ten.....	4 00
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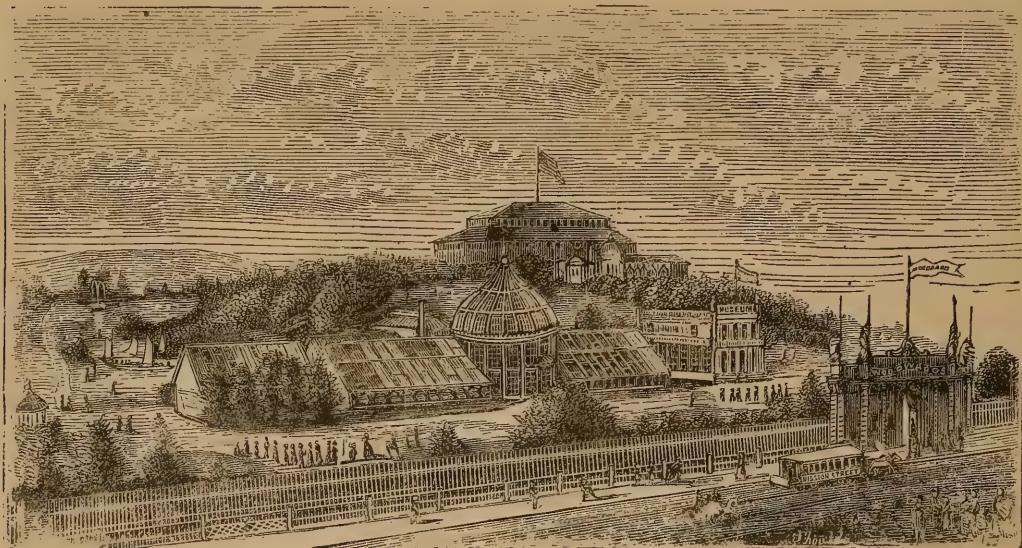
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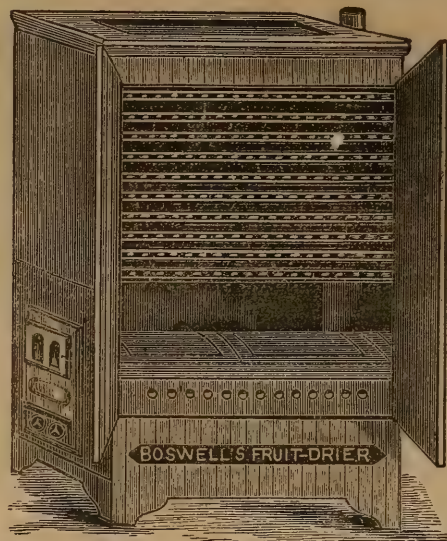
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Deflected Heat
Sets free the Water of Organization, and Sol-
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A cheap and handy drying machine, within the
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The Standard Drier contains 10 fruit-trays, 3 feet by 2 feet each, and will occupy a space on the floor of 3 feet 6 inches by 2 feet 3 inches, and 6 feet high. May be used in or out of doors, and can be easily removed without taking apart. Can be operated by one person, and will dry apples perfectly in two hours. Peaches, pears, plums, and most other fruits require longer time. It is made of the very best material, and is so simple in its construction that there is no danger of it getting out of repair.

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Fruit dried in the Boswell will gain from **20 to 40 per cent. in weight**, and **30 per cent. in quality**, over that dried by any other process. It will successfully dry any kind of Fruit, Berries, Grapes, Vegetables, Corn, Grain, Coffee, Tobacco, Meat, Fish, etc., etc. Fruit must be gathered when comparatively green to dry by the ordinary process, but with the Boswell it can be taken dead ripe (and it is far better at that stage) and dried perfectly, because the atmosphere in which it is dried is heated by **deflected heat**, and retains all the **oxygen in its pure state**, which is as essential for solidifying and preserving the fruit, as for its growth and maturity on the tree. Fruit dried by this process is acted upon by **true absorption**, thus setting free the water of organization which flows to the surface, and forms a saccharine coating, protecting and preserving the entire flavor and nutriment of its substance.

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